

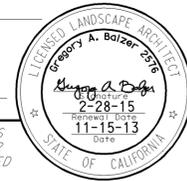
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	701	814

Gregory A. Balzer
LICENSED LANDSCAPE ARCHITECT

November 15, 2013
PLANS APPROVAL DATE

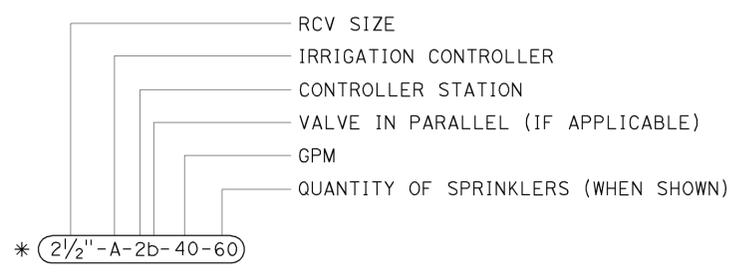
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TO ACCOMPANY PLANS DATED 2-23-15



EXISTING	NEW	ITEM DESCRIPTION
		WATER METER (WM)
		BACKFLOW PREVENTER ASSEMBLY (BPA)
		BACKFLOW PREVENTER ENCLOSURE (BPE)
		BOOSTER PUMP (BP)
		TRUCK LOADING STANDPIPE (TLS)
		FLOW SENSOR (FS)
		MASTER IRRIGATION CONTROLLER (MIC)
		AUXILIARY IRRIGATION CONTROLLER (AIC)
		IRRIGATION CONTROLLER (IC) IRRIGATION CONTROLLER (IC) (BATTERY) IRRIGATION CONTROLLER (IC) (SOLAR) IRRIGATION CONTROLLER (IC) (TWO WIRE) IRRIGATION CONTROLLER(S) IN CONTROLLER ENCLOSURE CABINET (ICC)
		ENCLOSURE CABINET (ICC)
		ARMOR-CLAD CONDUCTORS (ACC)
		CONTROL AND NEUTRAL CONDUCTORS (CNC)
		IRRIGATION CONDUIT
		EXTEND IRRIGATION CONDUIT
		DUCTILE IRON PIPE (SUPPLY LINE) (MAIN) (DIP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (MAIN) (GSP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (LATERAL) (GSP)
		PLASTIC PIPE (SUPPLY LINE) (MAIN)
		PLASTIC PIPE (SUPPLY LINE) (LATERAL)
		COPPER PIPE (SUPPLY LINE)
		DRIP IRRIGATION TUBING
		REMOTE CONTROL VALVE (RCV) REMOTE CONTROL VALVE (MASTER) (RCVM) REMOTE CONTROL VALVE (MASTER) W/FLOW METER (RCVMF)
		REMOTE CONTROL VALVE W/PRESSURE REGULATOR (RCVP)
		EXISTING MANUAL CONTROL VALVE (MCV)
		DRIP VALVE ASSEMBLY (DVA)
		WYE STRAINER ASSEMBLY (WSA)

EXISTING	NEW	ITEM DESCRIPTION
		GATE VALVE (GV)
		BALL VALVE (BV)
		QUICK COUPLING VALVE (QCV)
		CAM COUPLER ASSEMBLY (CCA)
		GARDEN VALVE ASSEMBLY (GARVA)
		PRESSURE REGULATING VALVE (PRV)
		PRESSURE RELIEF VALVE (PRLV)
		FLOW CONTROL VALVE (FCV)
		COMBINATION AIR RELEASE VALVE (CARV)
		CHECK VALVE (CV)
		FLUSH VALVE (FV)
		EXISTING NOZZLE LINE W/TURNING UNION
		EXISTING IRRIGATION SYSTEM
		EXISTING IRRIGATION SYSTEM TO BE REMOVED
		CHAIN LINK GATE
		QUICK COUPLING VALVE W/SPRINKLER PROTECTOR
		SPRINKLER W/SPRINKLER PROTECTOR
		CONNECT TO EXISTING SYSTEM
		CAP
		CAP EXISTING
		FIBER ROLL
		COMPOST SOCK



* 2 1/2" - A - 2b - 40 - 60

VALVE CODE

* VALVE CODES FOR EXISTING VALVES ARE SHOWN IN A DASHED ENCLOSURE.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
LANDSCAPE AND EROSION CONTROL SYMBOLS
NO SCALE

RSP H2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP H2 DATED JULY 19, 2013 AND STANDARD PLAN H2 DATED MAY 20, 2011 - PAGE 219 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H2

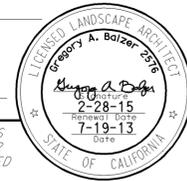
2010 REVISED STANDARD PLAN RSP H2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	702	814

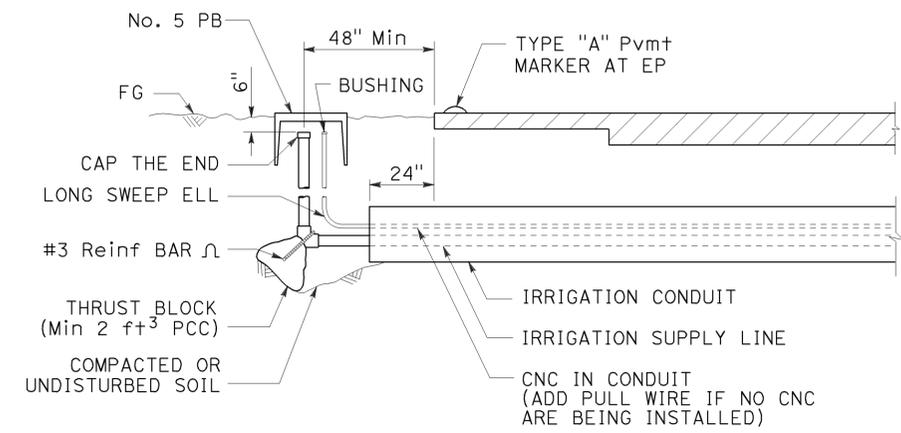
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT

July 19, 2013
 PLANS APPROVAL DATE

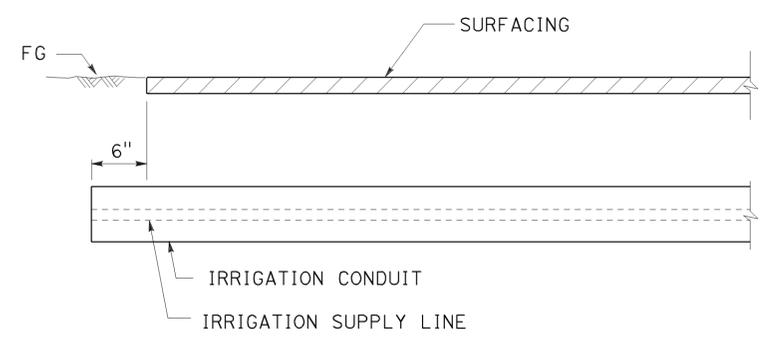
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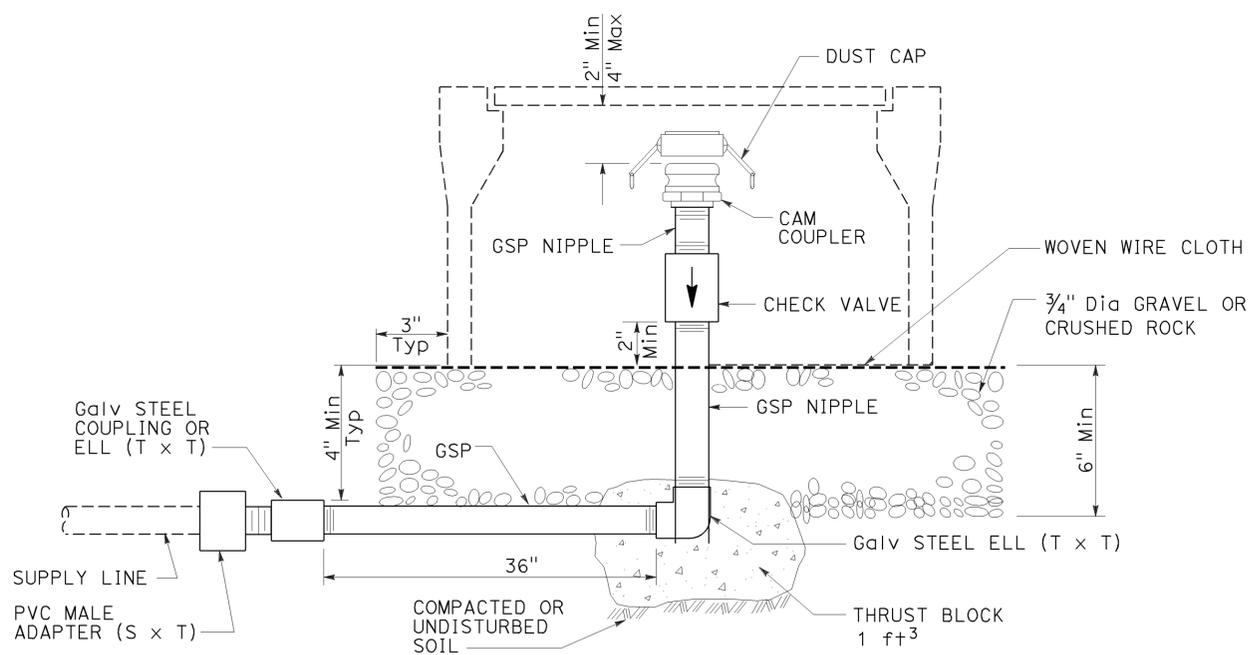
TO ACCOMPANY PLANS DATED 2-23-15



SECTION
IRRIGATION CONDUIT
UNDER TRAVELED WAY



SECTION
IRRIGATION CONDUIT
UNDER SIDEWALKS, DRIVEWAYS AND PATHS



ELEVATION
CAM COUPLER ASSEMBLY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
LANDSCAPE DETAILS
NO SCALE

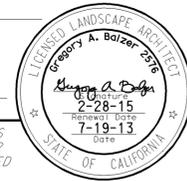
RSP H9 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H9 DATED MAY 20, 2011 - PAGE 226 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H9

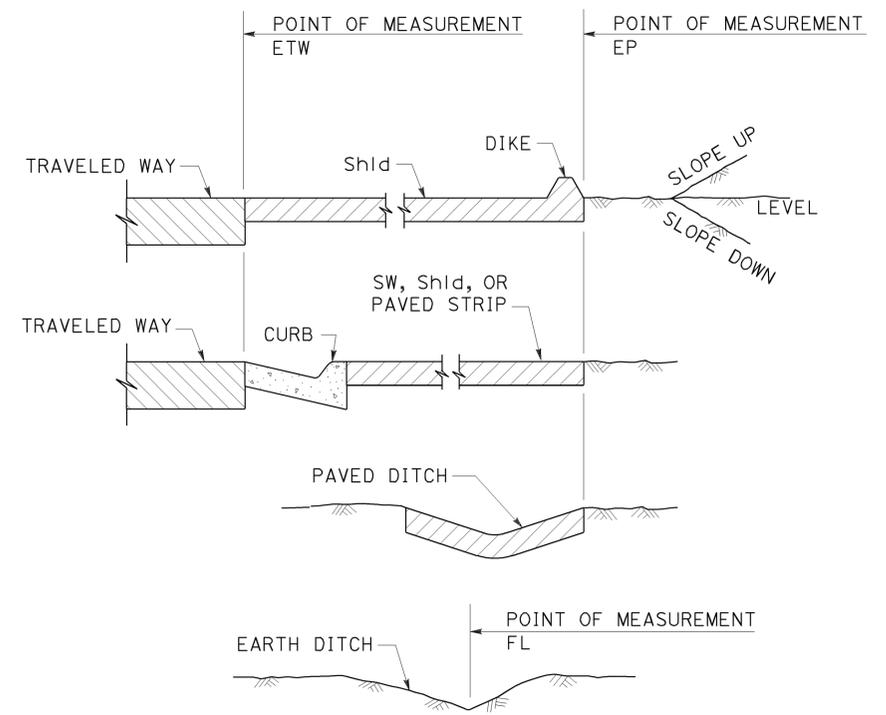
2010 REVISED STANDARD PLAN RSP H9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	703	814

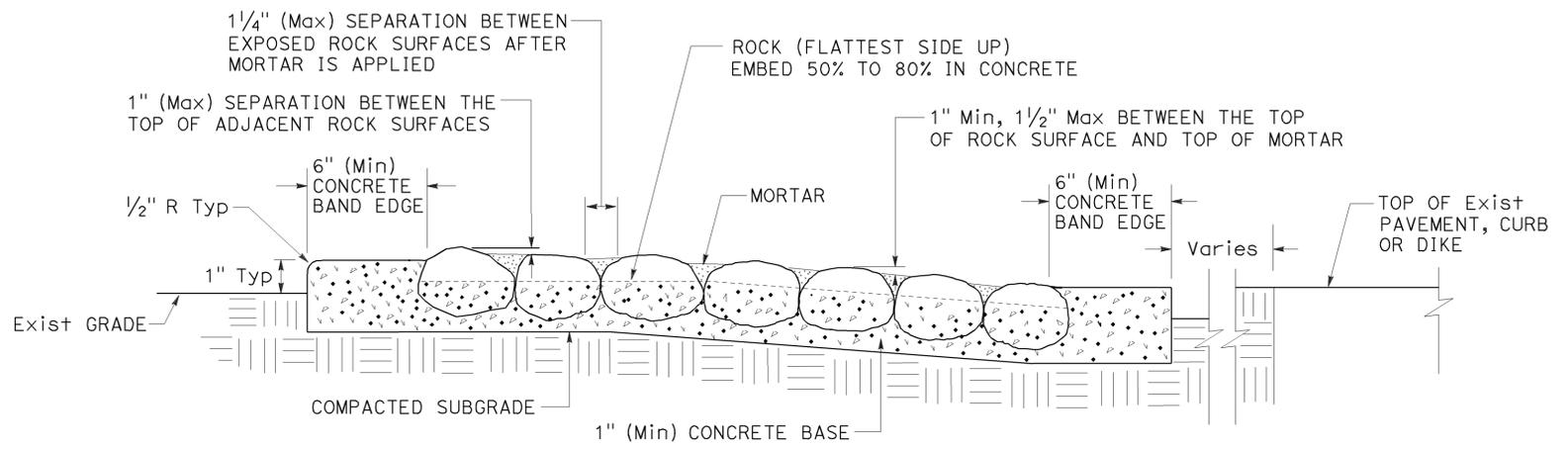
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 July 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



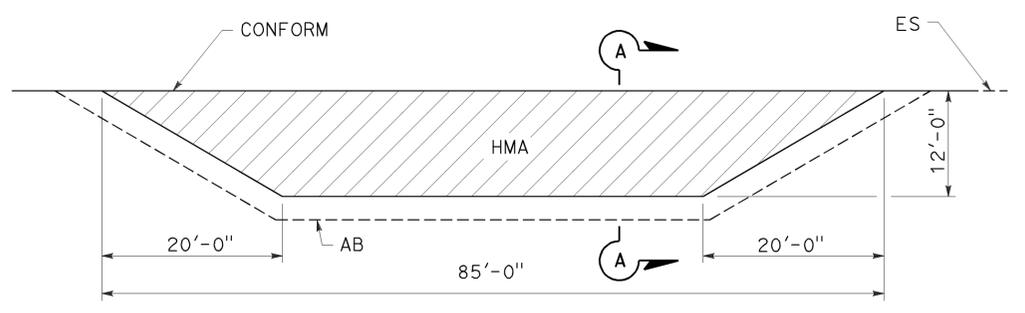
TO ACCOMPANY PLANS DATED 2-23-15



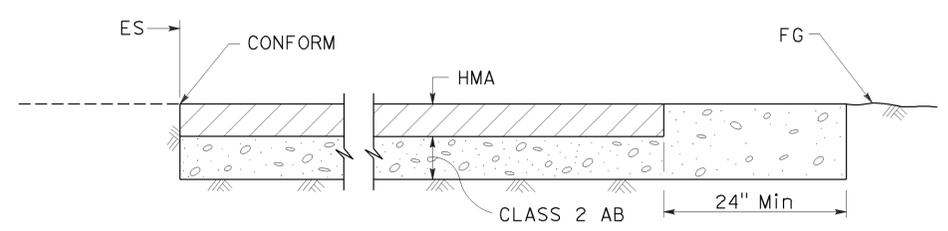
**SECTION
POINTS OF MEASUREMENT**



**SECTION
ROCK BLANKET**



PLAN



**SECTION A-A
MAINTENANCE VEHICLE PULLOUT**

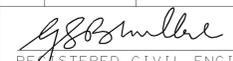
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
LANDSCAPE DETAILS
 NO SCALE

RSP H9A DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H9A

2010 REVISED STANDARD PLAN RSP H9A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	704	814


 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE



THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 2-23-15

TABLE 1

TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING							
SPEED (S)	MINIMUM TAPER LENGTH * FOR WIDTH OF OFFSET 12 FEET (W)				MAXIMUM CHANNELIZING DEVICE SPACING		
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	X	Y	Z **
					TAPER	TANGENT	CONFLICT
mph	ft	ft	ft	ft	ft	ft	ft
20	160	80	40	27	20	40	10
25	250	125	63	42	25	50	12
30	360	180	90	60	30	60	15
35	490	245	123	82	35	70	17
40	640	320	160	107	40	80	20
45	1080	540	270	180	45	90	22
50	1200	600	300	200	50	100	25
55	1320	660	330	220	55	110	27
60	1440	720	360	240	60	120	30
65	1560	780	390	260	65	130	32
70	1680	840	420	280	70	140	35

* - For other offsets, use the following merging taper length formula for L:
 For speed of 40 mph or less, $L = WS^2/60$
 For speed of 45 mph or more, $L = WS$

Where: L = Taper length in feet
 W = Width of offset in feet
 S = Posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

** - Use for taper and tangent sections where there are no pavement markings or where there is a conflict between existing pavement markings and channelizers (CA).

TABLE 2

LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING				
SPEED *	Min D **	DOWNGRADE Min D ***		
		-3%	-6%	-9%
		ft	ft	ft
mph	ft	ft	ft	ft
20	115	116	120	126
25	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
55	495	520	553	593
60	570	598	638	686
65	645	682	728	785
70	730	771	825	891

* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph
 ** - Longitudinal buffer space or flagger station spacing
 *** - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

TABLE 3

ADVANCE WARNING SIGN SPACING			
ROAD TYPE	DISTANCE BETWEEN SIGNS *		
	A	B	C
	ft	ft	ft
URBAN - 25 mph OR LESS	100	100	100
URBAN - MORE THAN 25 mph TO 40 mph	250	250	250
URBAN - MORE THAN 40 mph	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1000	1500	2640

* - The distances are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted by the Engineer for field conditions, if necessary, by increasing or decreasing the recommended distances.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM TABLES
 FOR LANE AND RAMP CLOSURES**

NO SCALE

RSP T9 DATED JULY 19, 2013 SUPERSEDES RSP T9 DATED APRIL 19, 2013
 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

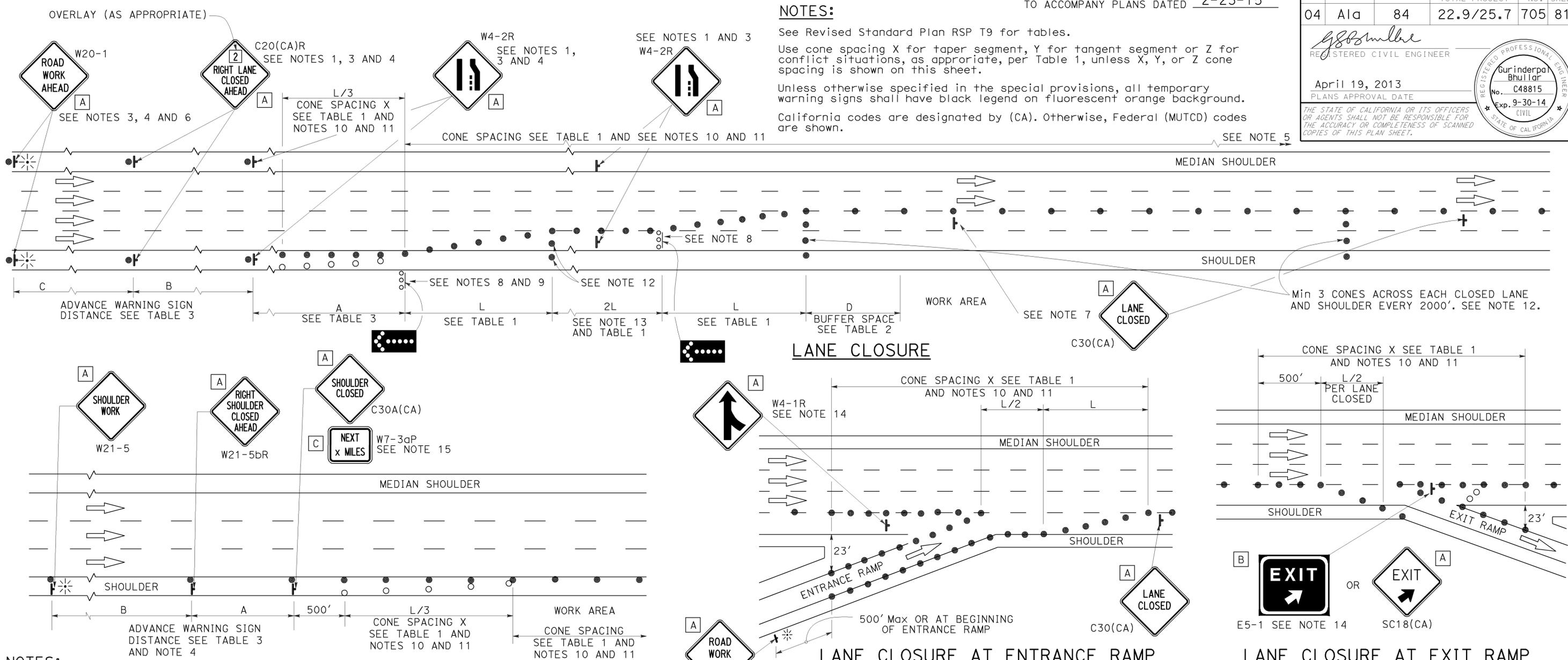
REVISED STANDARD PLAN RSP T9

2010 REVISED STANDARD PLAN RSP T9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	705	814

REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 Gurinderpal Bhullar
 No. C48815
 Exp. 9-30-14
 CIVIL
 STATE OF CALIFORNIA



- NOTES:**
1. Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
 2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
 3. Duplicate sign installations are not required:
 - a) On opposite shoulder if at least one-half of the available lanes remain open to traffic.
 - b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
 4. Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
 5. A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.

- SHOULDER CLOSURE**
6. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a C20(CA)L and W4-2L signs shall be used.
 7. Place a C30(CA) sign every 2000' throughout length of lane closure.
 8. One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
 9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
 10. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
 11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.

- LANE CLOSURE AT ENTRANCE RAMP**
- LANE CLOSURE AT EXIT RAMP**
12. Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
 13. Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
 14. Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
 15. A W7-3aP "NEXT _____ MILES" plaque must be used if the shoulder closure extends beyond the distance that can be perceived by road users.

LEGEND

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- † TEMPORARY TRAFFIC CONTROL SIGN
- ⬢ FLASHING ARROW SIGN (FAS)
- ⬢ FAS SUPPORT OR TRAILER
- ⚡ PORTABLE FLASHING BEACON

SIGN PANEL SIZE (Min)

A	48" x 48"
B	72" x 60"
C	36" x 30"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM
 FOR LANE CLOSURE ON
 FREEWAYS AND EXPRESSWAYS**

NO SCALE

RSP T10 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10 DATED MAY 20, 2011 - PAGE 237 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T10

2010 REVISED STANDARD PLAN RSP T10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	84	22.9/25.7	706	814

NOTES: See Revised Standard Plan RSP T9 for tables.

Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

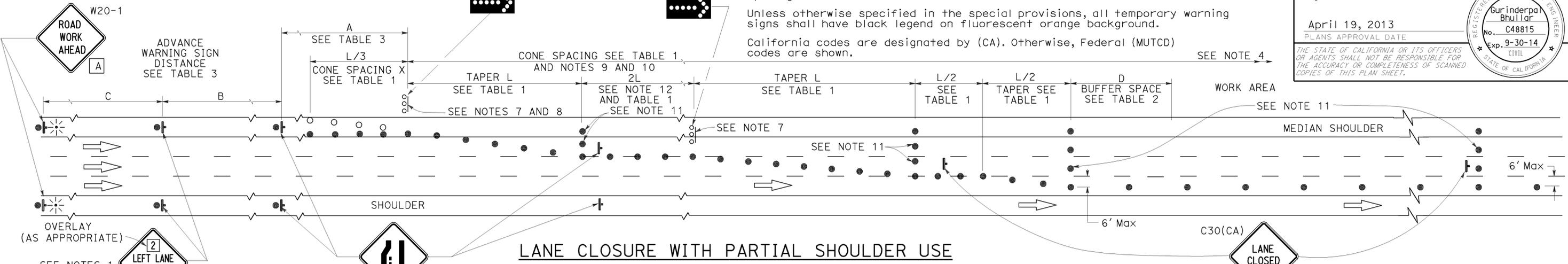
California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

REGISTERED CIVIL ENGINEER
 Gurinderpal Bhullar
 No. C48815
 Exp. 9-30-14
 CIVIL
 STATE OF CALIFORNIA

April 19, 2013
 PLANS APPROVAL DATE

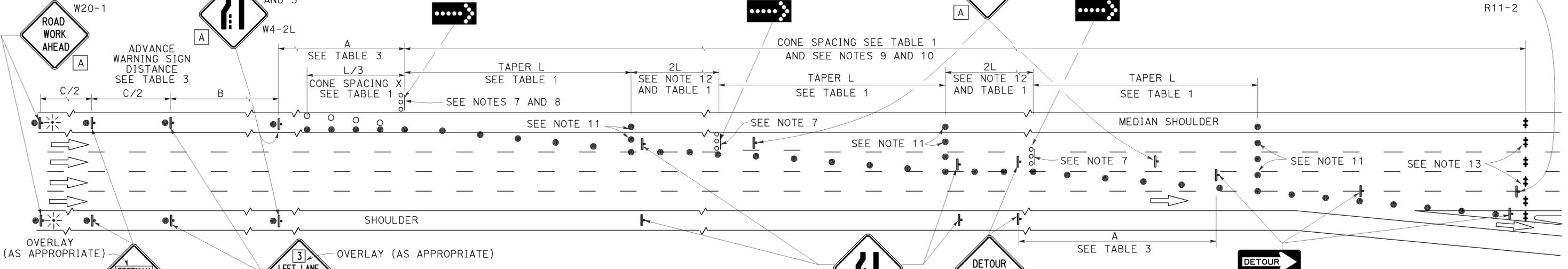
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SEE NOTES 3 AND 5



LANE CLOSURE WITH PARTIAL SHOULDER USE

SEE NOTES 3 AND 5



COMPLETE CLOSURE

NOTES:

- Lane closures on the right side using partial median shoulder as a traffic lane shall conform to the details as shown except that C20(CA)R and W4-2R signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
- Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" X 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT ___ MILES", use a C20(CA) sign for the first advance warning sign.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure With Partial Shoulder Use" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
- A minimum of Two Type II or III barricades shall be placed across each closed lane and shoulder at the location shown and every 2000' within the complete closure area. Within the complete closure area, the transverse alignment of the barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- When specified in the special provisions, a W20-2 "DETOUR AHEAD" sign is to be used in place of the W20-3 "FREEWAY CLOSED AHEAD" sign.

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 48" x 18"
- C 48" x 30"

LEGEND

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- ⊥ TEMPORARY TRAFFIC CONTROL SIGN
- FLASHING ARROW SIGN (FAS)
- ⊥⊥ FAS SUPPORT OR TRAILER
- ⊛ PORTABLE FLASHING BEACON

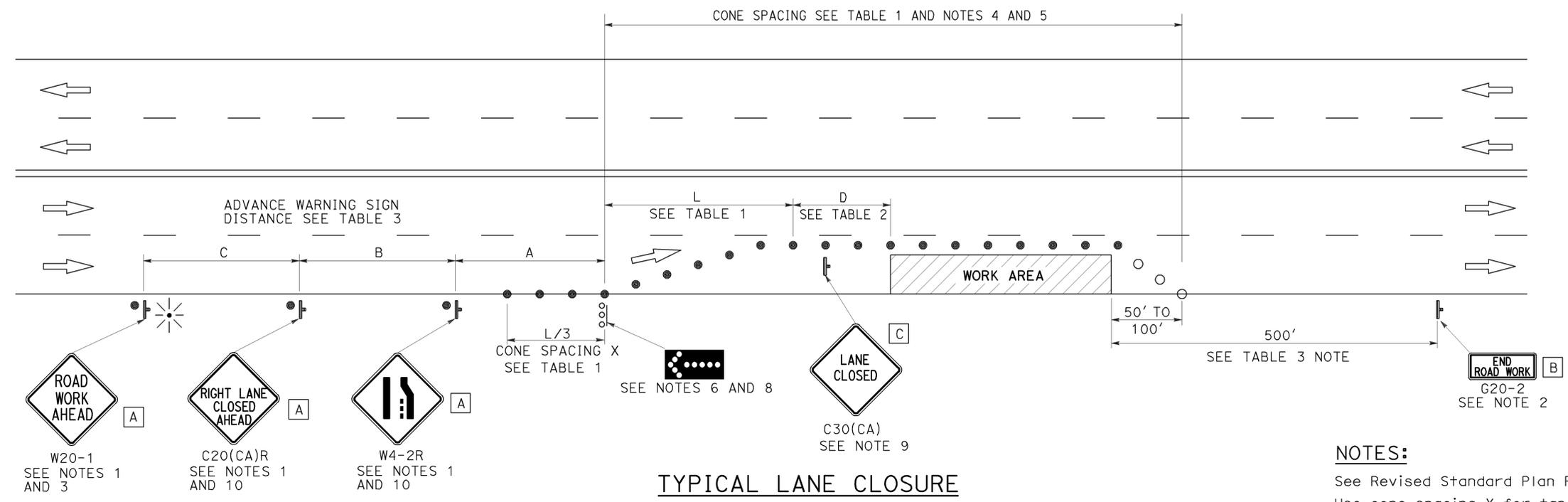
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR LANE CLOSURES ON
 FREEWAYS AND EXPRESSWAYS**
 NO SCALE

RSP T10A DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10A DATED MAY 20, 2011 - PAGE 238 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T10A

2010 REVISED STANDARD PLAN RSP T10A

TO ACCOMPANY PLANS DATED 2-23-15



TYPICAL LANE CLOSURE

NOTES:

See Revised Standard Plan RSP T9 for tables.

Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

NOTES:

- Each advance warning sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious, or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a C20(CA) sign for the first advance warning sign.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Flashing arrow sign shall be either Type I or Type II.
- For approach speeds over 50 mph, use the "Traffic Control System for Lane Closure On Freeways And Expressways" plan for lane closure details and requirements.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closure unless, otherwise directed by the Engineer.

LEGEND

-  TRAFFIC CONE
-  TRAFFIC CONE (OPTIONAL TAPER)
-  TEMPORARY TRAFFIC CONTROL SIGN
-  FLASHING ARROW SIGN (FAS)
-  FAS SUPPORT OR TRAILER
-  PORTABLE FLASHING BEACON

SIGN PANEL SIZE (Min)

- A** 48" x 48"
- B** 36" x 18"
- C** 30" x 30"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR LANE CLOSURE ON
 MULTILANE CONVENTIONAL
 HIGHWAYS**

NO SCALE

RSP T11 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T11
 DATED MAY 20, 2011 - PAGE 239 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T11

2010 REVISED STANDARD PLAN RSP T11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	708	814

REGISTERED CIVIL ENGINEER
 Gurinderpal Bhullar
 No. C48815
 Exp. 9-30-14
 CIVIL
 STATE OF CALIFORNIA

April 19, 2013
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS
 OR AGENTS SHALL NOT BE RESPONSIBLE FOR
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 COPIES OF THIS PLAN SHEET.

LEGEND

- TRAFFIC CONE
- ⌋ TEMPORARY TRAFFIC CONTROL SIGN
- ⬢ FLASHING ARROW SIGN (FAS)
- FAS SUPPORT OR TRAILER
- ⊛ PORTABLE FLASHING BEACON

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 24" x 24"
- C 36" x 18"

NOTES:

See Revised Standard Plan RSP T9 for tables.

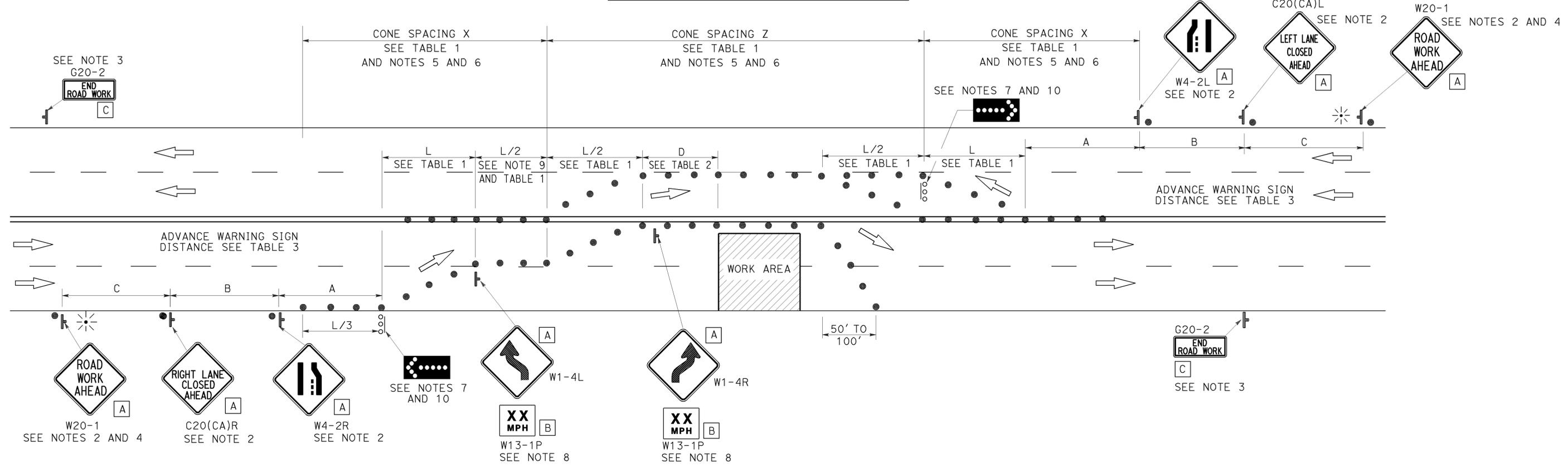
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

TO ACCOMPANY PLANS DATED 2-23-15

TYPICAL HALF ROAD CLOSURE



NOTES:

1. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closure unless, otherwise directed by the Engineer.
2. Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
3. A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious, or ends within a larger project's limits.
4. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a C20(CA) sign for the first advance warning sign.
5. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
6. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
7. Flashing arrow signs shall be either Type I or Type II.
8. Advisory speed will be determined by the Engineer. The W13-1P Plaque will not be required when advisory speed is more than the posted or maximum speed limit.
9. Unless otherwise specified in the special provisions, the tangent (L/2) shall be used.
10. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM
FOR HALF ROAD CLOSURE ON
MULTILANE CONVENTIONAL
HIGHWAYS AND EXPRESSWAYS**

NO SCALE

RSP T12 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T12
DATED MAY 20, 2011 - PAGE 240 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T12

2010 REVISED STANDARD PLAN RSP T12

NOTES:

See Revised Standard Plan RSP T9 for tables.

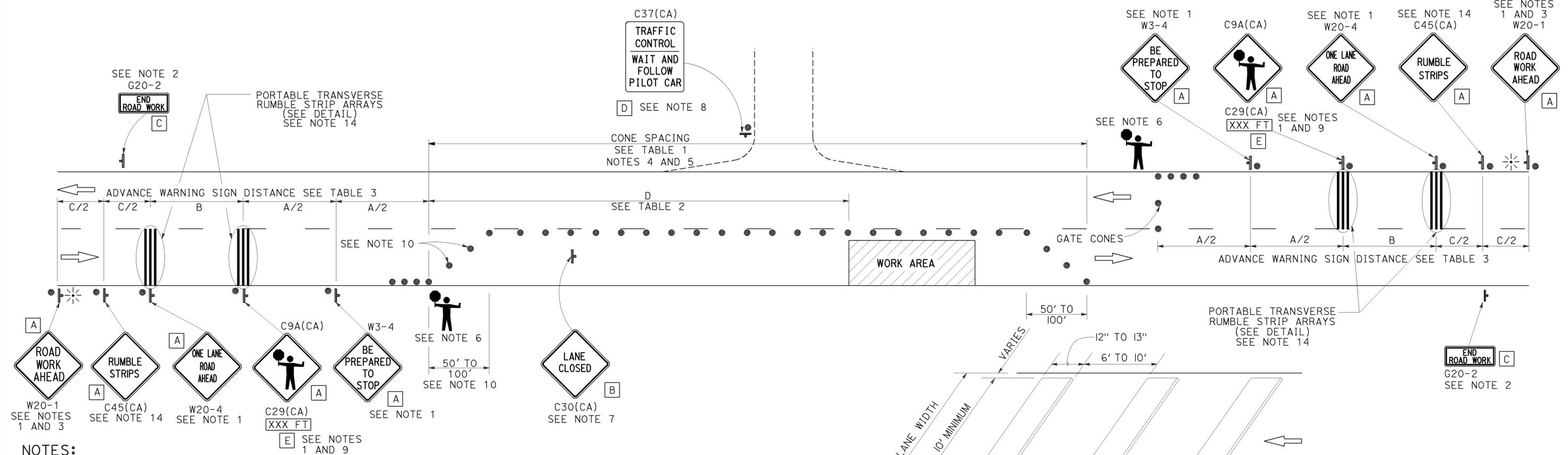
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

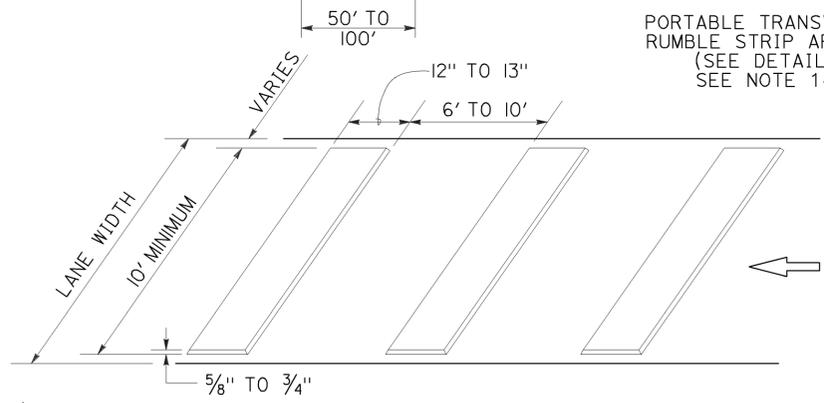
TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL

TO ACCOMPANY PLANS DATED 2-23-15



- NOTES:**
- Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
 - A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
 - If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a W20-4 sign for the first advance warning sign.
 - All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
 - Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
 - Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging-station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.

- Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
- When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
- An optional C29(CA) sign may be placed below the C9A(CA) sign.
- Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.
- The color of the portable transverse rumble strips shall be black or orange. Use 2 arrays, each array shall consist of 3 rumble strips.
- Portable transverse rumble strips shall not be placed on sharp horizontal or vertical curves nor shall they be placed through pedestrian crossings.
- If the portable transverse rumble strips become out of alignment (skewed) by more than 6 inches, measured from one end to the other, they shall be readjusted to bring the placement back to the original location.
- Portable transverse rumble strips are not required if any one of the following conditions is satisfied:
 - Work duration occupies a location for four hours or less
 - Posted speed limit is below 45 MPH
 - Work is of emergency nature
 - Work zone is in snow or icy weather conditions



SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 30" x 30"
- C 36" x 18"
- D 36" x 42"
- E 20" x 7"

LEGEND

- TRAFFIC CONE
- ⊥ TEMPORARY TRAFFIC CONTROL SIGN
- ⚡ PORTABLE FLASHING BEACON
- 🚧 FLAGGER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM
FOR LANE CLOSURE ON
TWO LANE CONVENTIONAL
HIGHWAYS**

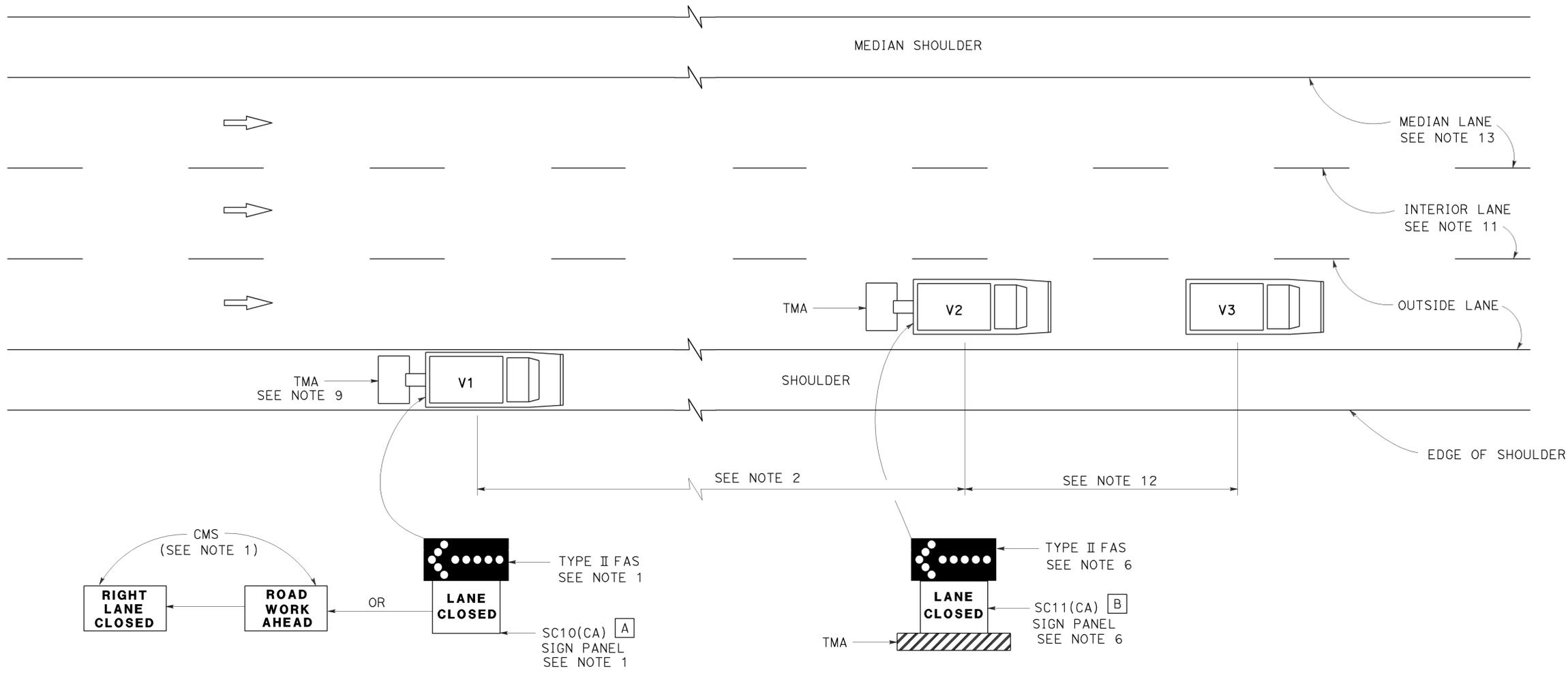
NO SCALE

RSP T13 DATED OCTOBER 17, 2014 SUPERSEDES RSP T13 DATED JULY 18, 2014
AND RSP T13 DATED APRIL 19, 2013 AND STANDARD PLAN T13 DATED
MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP T13



TO ACCOMPANY PLANS DATED 2-23-15



SIGN PANEL SIZE (Min)

- A 66" x 36"
- B 54" x 42"

LEGEND

- V1 SIGN VEHICLE
- V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
-  FLASHING ARROW SIGN (FAS)
- CMS CHANGEABLE MESSAGE SIGN
- TMA TRUCK-MOUNTED ATTENUATOR

**MOVING LANE CLOSURE ON MEDIAN LANE OR
OUTSIDE LANE OF MULTILANE HIGHWAYS**

NOTES:

1. Either a changeable message sign or a SC10(CA) sign panel and a Type II flashing arrow sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "RIGHT LANE CLOSED" message. For median lane closure, the flashing arrow symbol shall be reversed with the arrowhead on the right and the changeable message sign shall show "LEFT LANE CLOSED".
2. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue. Sign vehicle V1 shall be positioned where highly visible when shoulders are not available.
3. A minimum sight distance of 1500' should be provided in advance of sign vehicle V1.
4. Sign vehicle V1 should remain at the beginning of horizontal or vertical curves until the other vehicles (V2 and V3) are far enough beyond the curve to resume the minimum sight distance of 1500'.
5. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
6. Shadow vehicle V2 shall be equipped with a truck-mounted attenuator. The sign panel shown and a Type II flashing arrow sign shall be mounted on the rear of shadow vehicle V2. For median lane closure the flashing arrow sign symbol shall be displayed with the arrowhead on the right.
7. All vehicles used for lane closures shall be equipped with two-way radios, and the vehicle operators shall maintain communication during the work or application operation.
8. All vehicles shall be equipped with flashing or rotating amber lights.
9. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.
10. Where workers would be on foot in the work area, a stationary type lane closure (Revised Standard Plan T10, T11, etc., as applicable) shall be used instead of this plan.
11. For moving lane closure on interior lane of multilane highways, use Revised Standard Plan T16.
12. The spacing between work vehicle(s) and the shadow vehicles, and between each shadow vehicle should be minimized to deter road users from driving in between.
13. When the work/application vehicle V3 occupies the median lane, sign vehicle V1 should drive in the median shoulder and indicate left lane closed ahead.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM
FOR MOVING LANE CLOSURE
ON MULTILANE HIGHWAYS**

NO SCALE

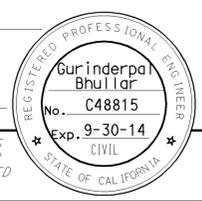
RSP T15 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T15
DATED MAY 20, 2011 - PAGE 243 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T15

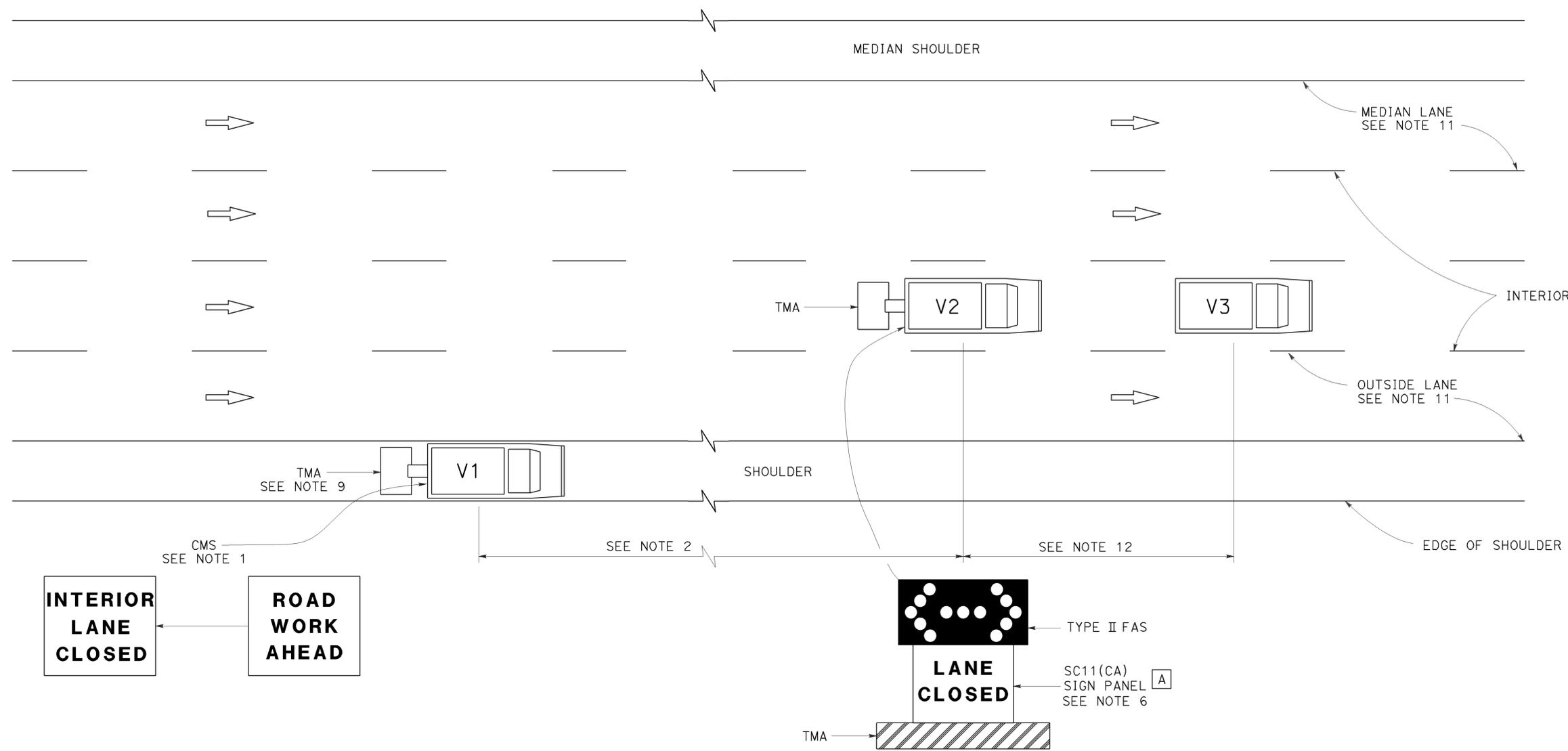
2010 REVISED STANDARD PLAN RSP T15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	711	814

Registered Civil Engineer
 April 19, 2013
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



TO ACCOMPANY PLANS DATED 2-23-15



SIGN PANEL SIZE (Min)

A 54" x 42"

LEGEND

- V1 SIGN VEHICLE
- V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
-  FLASHING ARROW SIGN (FAS) IN FLASHING DOUBLE ARROW MODE
- CMS CHANGEABLE MESSAGE SIGN
- TMA TRUCK-MOUNTED ATTENUATOR

MOVING LANE CLOSURE ON INTERIOR LANE OF MULTILANE HIGHWAYS

NOTES:

1. A changeable message sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "INTERIOR LANE CLOSED" message. The message "CENTER LANE CLOSED" may be used in place of the "INTERIOR LANE CLOSED" message.
2. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue. Sign vehicle V1 shall be positioned where highly visible when shoulders are not available.
3. A minimum sight distance of 1500' should be provided in advance of sign vehicle V1.
4. Sign vehicle V1 should remain at the beginning of horizontal or vertical curves until the other vehicles (V2 and V3) are far enough beyond the curve to resume the minimum sight distance of 1500'.
5. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
6. Shadow vehicle V2 shall be equipped with a truck-mounted attenuator. The sign panel shown and a Type II flashing arrow sign shall be mounted on the rear of shadow vehicle V2.
7. All vehicles used for lane closures shall be equipped with two-way radios, and the vehicle operators shall maintain communication during the work or application operation.
8. All vehicles shall be equipped with flashing or rotating amber lights.
9. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.
10. Where workers would be on foot in the work area, a stationary type lane closure (Revised Standard Plan T10, T11 etc., as applicable) shall be used instead of this plan.
11. For moving lane closure on median lane or outside lane of multilane highways, use Revised Standard Plan T15.
12. The spacing between work vehicle(s) and the shadow vehicles, and between each shadow vehicle should be minimized to deter road users from driving in between.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR MOVING LANE CLOSURE
 ON MULTILANE HIGHWAYS**
 NO SCALE

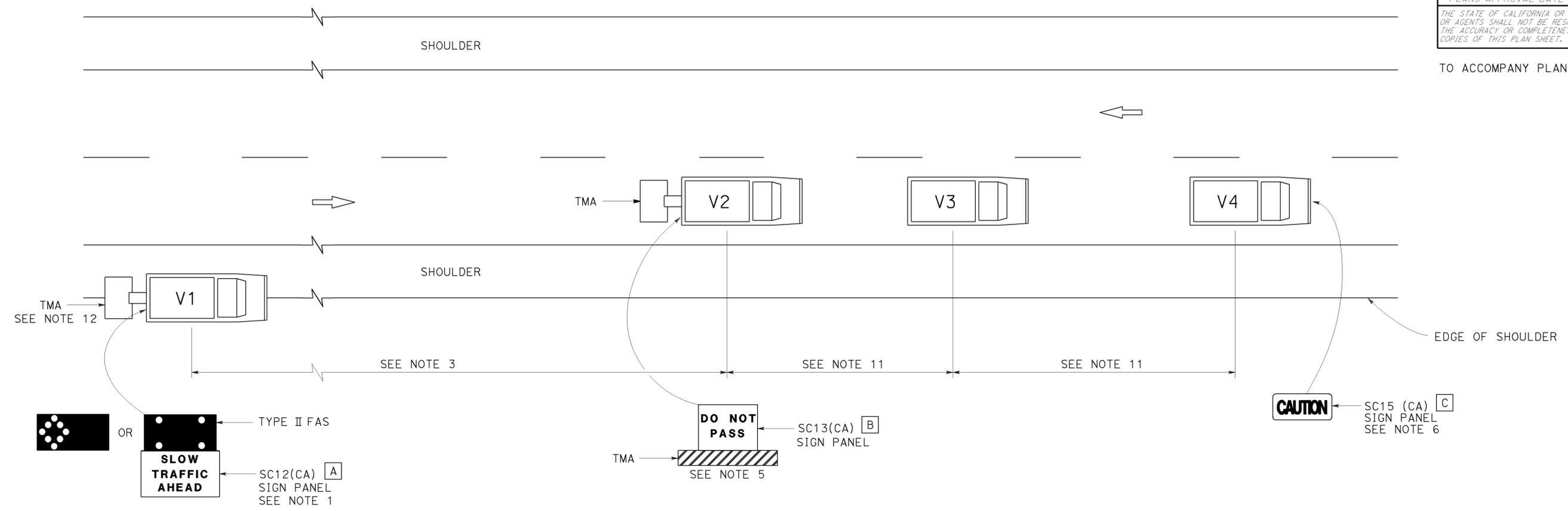
RSP T16 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T16 DATED MAY 20, 2011 - PAGE 244 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T16

2010 REVISED STANDARD PLAN RSP T16



TO ACCOMPANY PLANS DATED 2-23-15

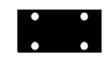


NOTES:

1. Either a changeable message sign or a SC12(CA) "SLOW TRAFFIC AHEAD" sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "CAUTION" message first, follow by the "SLOW TRAFFIC AHEAD" message. A Type II flashing arrow sign may be used with the SC12(CA) sign panel.
2. Sign vehicle V1 should be positioned where highly visible when shoulders are not available.
3. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue.
4. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
5. Shadow vehicle shall be equipped with a truck-mounted attenuator. The sign panel shown shall be mounted on the rear of shadow vehicle V2. The message "LANE CLOSED" may be used in place of the "DO NOT PASS" message.
6. The sign panel shown shall be mounted on the front of sign vehicle V4, facing opposing traffic.

7. All vehicles shall be equipped with flashing or rotating amber lights.
8. Sign vehicle V4 will not be required when the work and vehicles V2 and V3 are 2' or more from the centerline of the highway during the work or application operations.
9. All vehicles used for lane closures shall be equipped with two-way radios and the vehicle operators shall maintain communication during the work or application operation.
10. This plan shall not be used where workers would be on foot in the work area. Use a stationary type lane closure (Revised Standard Plan T13) for this condition.
11. Minimize spacing between vehicles V2 and V3 and vehicles V3 and V4 to deter road users from driving in between them.
12. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.

LEGEND

- V1 SIGN VEHICLE
- V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
- V4 SIGN VEHICLE
- TMA TRUCK-MOUNTED ATTENUATOR
-  FLASHING ARROW SIGN (FAS) IN FLASHING CAUTION MODE
-  FLASHING ARROW SIGN (FAS) IN ALTERNATING DIAMOND CAUTION

SIGN PANEL SIZE (Min)

- A** 72" x 42"
- B** 54" x 42"
- C** 54" x 24"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR MOVING LANE CLOSURE
 ON TWO LANE HIGHWAYS**
 NO SCALE

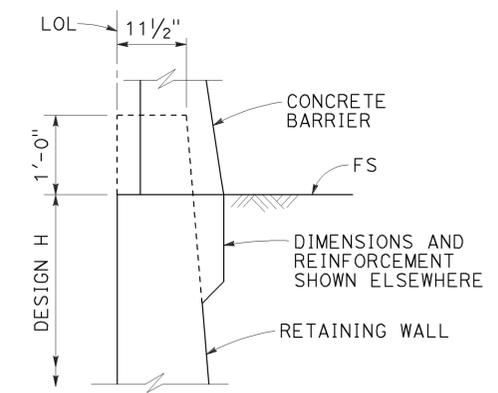
RSP T17 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T17
 DATED MAY 20, 2011 - PAGE 245 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T17

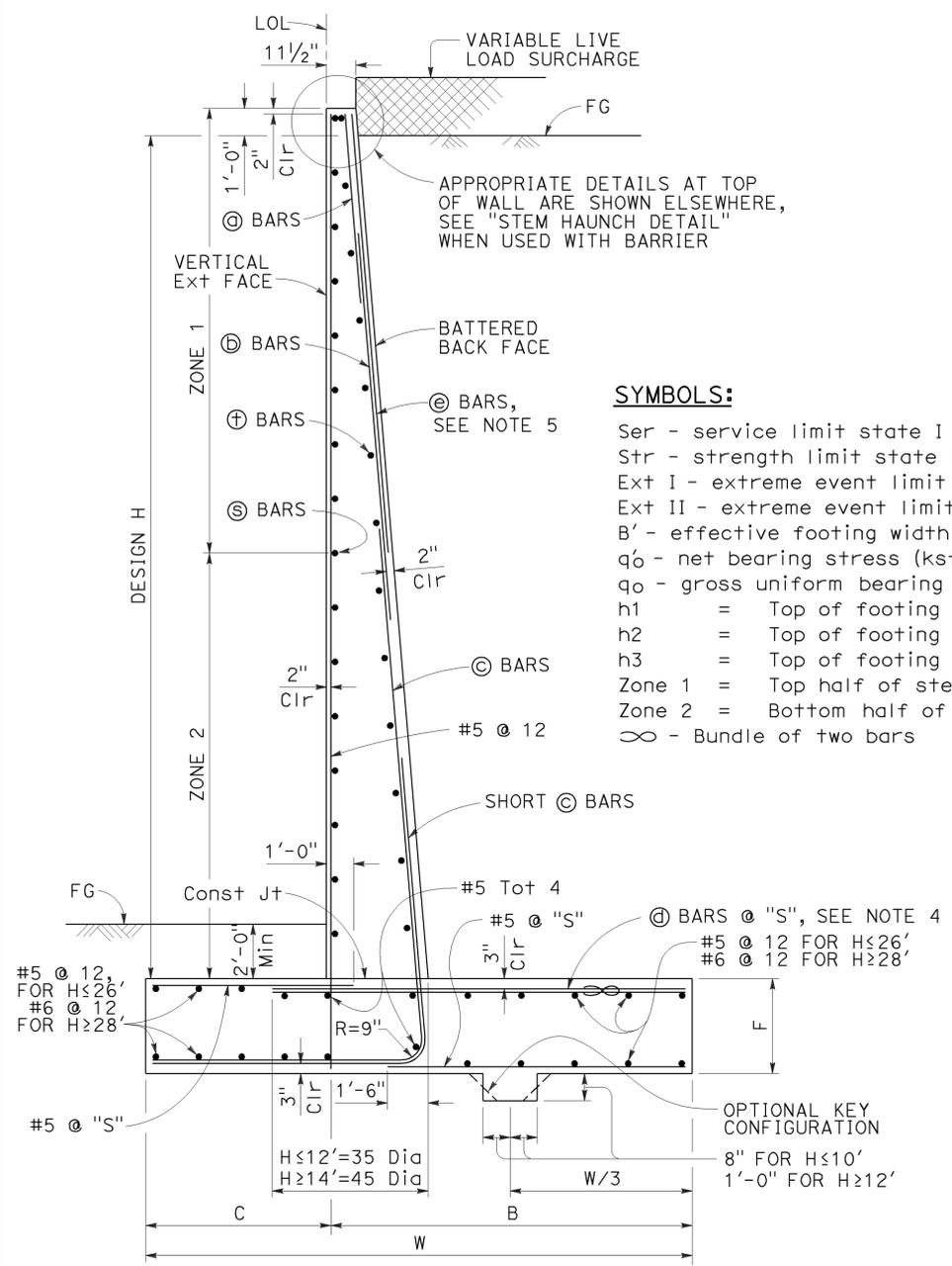
2010 REVISED STANDARD PLAN RSP T17

DESIGN CONDITIONS:

Design H may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in the table.



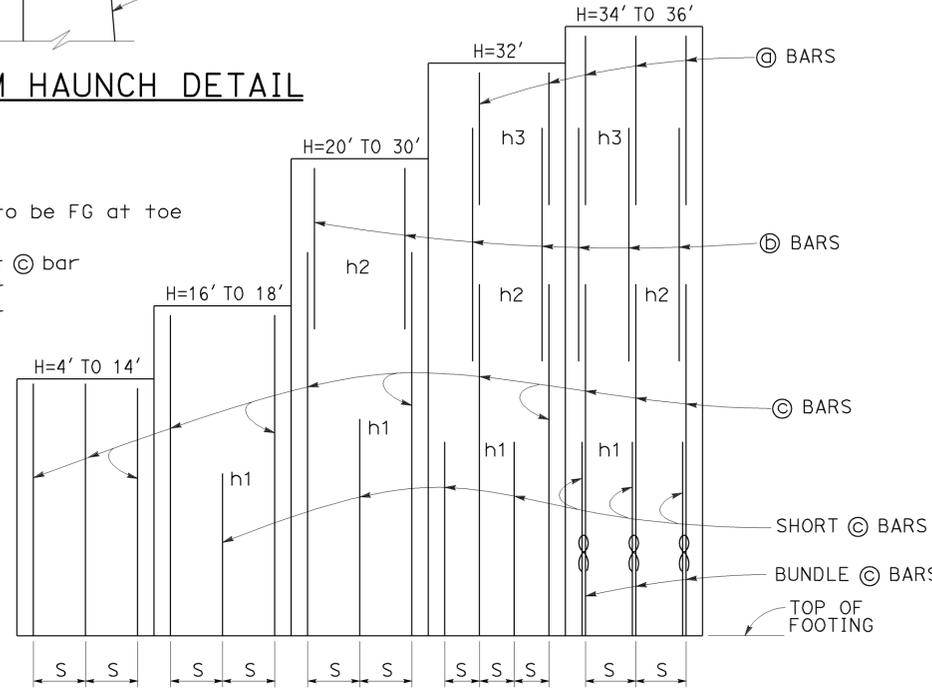
STEM HAUNCH DETAIL



TYPICAL SECTION

SYMBOLS:

- Ser - service limit state I
- Str - strength limit state I
- Ext I - extreme event limit state I
- Ext II - extreme event limit state II
- B' - effective footing width (ft)
- q₀ - net bearing stress (ksf), OG assumed to be FG at toe
- q_o - gross uniform bearing stress (ksf)
- h1 = Top of footing to top of short C bar
- h2 = Top of footing to top of C bar
- h3 = Top of footing to top of D bar
- Zone 1 = Top half of stem height
- Zone 2 = Bottom half of stem height
- ∞ - Bundle of two bars



ELEVATION

DESIGN NOTES:

- TO ACCOMPANY PLANS DATED 2-23-15
- DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments
 - LS: Varied surcharge on level ground surface
 - DC: Stem Architectural Treatment of thickness up to 6" of concrete (75 psf) considered
 - CT: 54 kip transverse force applied at H_e = 32', distributed over 10 feet at the top of wall and 1:1 distribution down and outward. Distribution below footing taken no less than 40'.
 - SEISMIC: k_H = 0.2, k_V = 0.0
 - SOIL: φ = 34°, γ = 120 pcf
 - REINFORCED CONCRETE: f'c = 3,600 psi, fy = 60,000 psi
 - LOAD COMBINATIONS AND LIMIT STATES:
 - Service I Q = 1.00DC+1.00EV+1.00EH+1.00LS
 - Strength I Q = αDC+βEV+ηEH+1.75LS
 - Extreme I Q = 1.00DC+1.00EV+1.00EH+1.00EQD+1.00EQE
 - Extreme II Q = 1.00DC+1.00EV+1.00EH+1.00CT
 - Where:
 - Q: Force Effects
 - α: 1.25 or 0.90, Whichever Controls Design
 - β: 1.35 or 1.00, Whichever Controls Design
 - η: 1.50 or 0.90, Whichever Controls Design
 - DC: Dead Load of Structure Components
 - EH: Horizontal Earth Fill Pressure
 - EV: Vertical Earth Pressure from Earth Fill Weight
 - LS: Live Load Surcharge
 - EQE: Seismic Earth Pressure
 - EQD: Soil and Structural and Nonstructural Components Inertia
 - CT: Vehicular Collision Force

NOTES:

1. For details not shown and drainage notes see RSP B3-5
2. For wall stem joint details see B0-3 3-3 and B0-3 3-4
3. At C bars:
 - H ≤ 6', no splices are allowed within 1'-8" above the top of footing.
 - H > 6', no splices are allowed within H/4 above the top of footing.
4. Bundle D bars for H = 34' & 36'.
5. Provide #6 @ 10" x 15'-0" C bars over a distance of 8'-0" measured from all expansion joints, begin wall and end wall locations. For H ≤ 14', hook C bar into footing and reduce bar length as needed to maintain Min Clr cover.

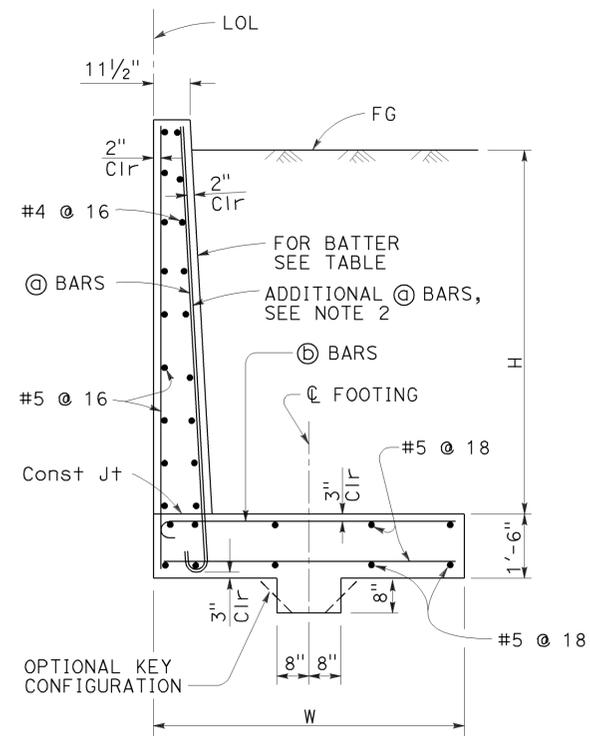
DESIGN H	4'	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'	34'	36'
W	6'-10"	7'-0"	7'-3"	7'-7"	8'-4"	9'-7"	10'-9"	12'-0"	13'-3"	14'-6"	15'-9"	17'-1"	18'-5"	19'-10"	21'-2"	22'-7"	24'-0"
C	2'-2"	2'-3"	2'-3"	2'-4"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-5"	6'-0"	6'-6"	7'-2"	7'-8"	8'-2"	9'-0"
B	4'-8"	4'-9"	5'-0"	5'-3"	5'-10"	6'-7"	7'-3"	8'-0"	8'-9"	9'-6"	10'-4"	11'-1"	11'-11"	12'-8"	13'-6"	14'-5"	15'-0"
F	1'-4"	1'-4"	1'-4"	1'-4"	1'-6"	1'-8"	1'-8"	1'-9"	1'-9"	1'-11"	2'-2"	2'-5"	2'-10"	3'-3"	3'-6"	4'-0"	4'-3"
BATTER	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	5/8: 12	5/8: 12	3/4: 12	7/8: 12	1: 12	1: 12	1: 12
SPACING "S"	9"	9"	9"	9"	9"	7"	6"	5"	6"	6"	6"	6"	6"	6"	6"	10"	8"
C BARS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D BARS	-	-	-	-	-	-	-	-	#7	#7	#7	#7	#7	#7	#7	#7	#7
E BARS	#6	#6	#6	#6	#6	#6	#7	#7	#8	#9	#9	#10	#10	#10	#10	#11	#11
F BARS	#5	#5	#6	#6	#6	#6	#9	#8	#8	#9	#9	#10	#10	#10	#11	#11	#11
h1	-	-	-	-	-	-	5'-9"	5'-10"	8'-0"	9'-0"	10'-1"	11'-0"	12'-1"	13'-0"	13'-0"	12'-7"	11'-6"
h2	-	-	-	-	-	-	-	-	10'-5"	13'-0"	14'-7"	17'-6"	19'-0"	20'-5"	19'-0"	18'-0"	20'-2"
h3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21'-10"	24'-0"
ZONE 1 E BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12
ZONE 2 E BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#6 @ 12	#6 @ 12	#6 @ 12	#7 @ 12	#7 @ 12
ZONE 1 F BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12
ZONE 2 F BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#5 @ 12	#5 @ 12	#5 @ 12
Ser: B', q ₀	6.8, 0.7	6.5, 1.0	6.2, 1.3	6.0, 1.6	6.3, 2.0	7.5, 2.1	8.6, 2.2	9.8, 2.3	11.0, 2.4	12.1, 2.5	13.2, 2.8	14.4, 2.9	15.5, 3.1	16.8, 3.3	18.0, 3.5	19.2, 3.7	20.6, 3.7
Str: B', q _o	6.6, 1.6	5.0, 1.8	3.6, 2.3	3.0, 3.3	3.2, 4.0	4.3, 3.8	5.3, 3.7	6.4, 3.7	7.4, 3.8	8.2, 4.1	9.0, 4.4	9.9, 4.6	10.7, 4.9	11.7, 5.2	12.6, 5.4	13.6, 5.8	14.6, 5.9
Ext I: B', q _o	5.2, 1.1	4.7, 1.5	3.9, 2.2	3.1, 3.4	2.8, 4.8	3.2, 5.3	3.6, 5.7	4.1, 6.1	4.6, 6.4	5.0, 6.9	5.3, 7.6	5.8, 8.1	6.1, 8.9	6.7, 9.4	7.1, 10.0	7.5, 10.7	8.2, 10.9
Ext II: B', q _o	2.6, 2.2	2.7, 2.6	2.8, 3.1	2.9, 3.6	3.7, 3.6	5.2, 3.3	6.7, 3.1	8.3, 3.0	9.8, 3.0	11.2, 3.1	12.5, 3.2	13.9, 3.4	15.2, 3.6	16.7, 3.8	18.0, 4.0	19.3, 4.2	20.8, 4.3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
RETAINING WALL TYPE 1 (CASE 1)
NO SCALE

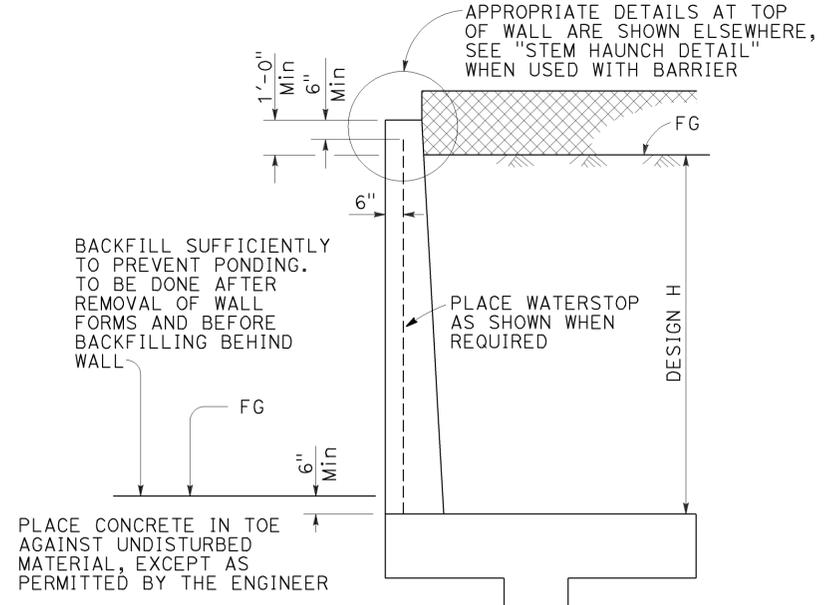
RSP B3-1A DATED APRIL 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP B3-1A

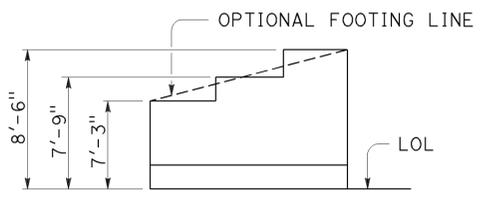
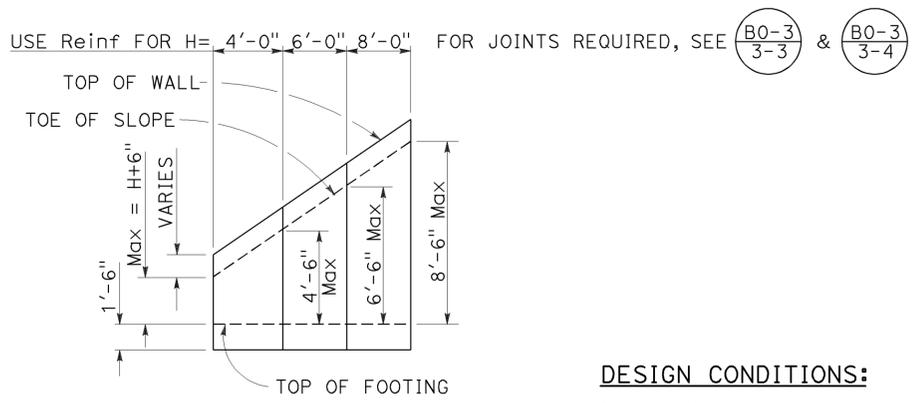
2010 REVISED STANDARD PLAN RSP B3-4A



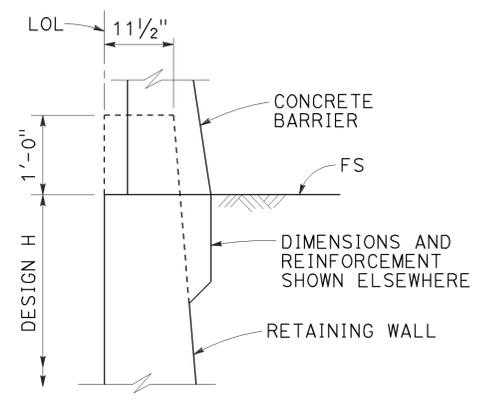
SPREAD FOOTING SECTION



DESIGN SECTION



TYPICAL LAYOUT EXAMPLE



STEM HAUNCH DETAIL

DESIGN CONDITIONS:

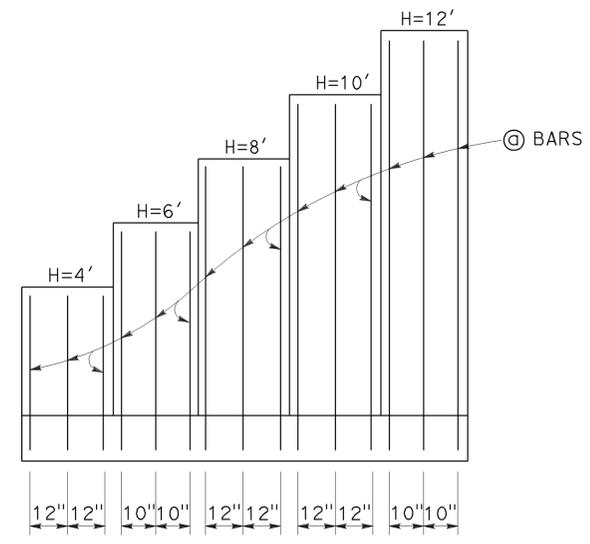
Design H may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in the table.

DESIGN NOTES:

- DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments
- LS: Varied surcharge on level ground surface
- DC: Stem Architectural Treatment of thickness up to 6" of concrete (75 psf) considered
- CT: 54 kip transverse force applied at $H_e = 32"$, distributed over 10 feet at the top of wall and 1 : 1 distribution down and outward. Distribution below footing taken no less than 40'.
- SEISMIC: $K_h = 0.2$
 $K_v = 0.0$
- SOIL: $\phi = 34^\circ$
 $\gamma = 120$ pcf
- REINFORCED CONCRETE: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi
- LOAD COMBINATIONS AND LIMIT STATES:
- Service I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00LS$
 - Strength I $Q = aDC + \beta EV + \eta EH + 1.75LS$
 - Extreme I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00EQD + 1.00EQE$
 - Extreme II $Q = 1.00DC + 1.00EV + 1.00EH + 1.00CT$
- Where:
- Q: Force Effects
 - a: 1.25 or 0.90, Whichever Controls Design
 - β : 1.35 or 1.00, Whichever Controls Design
 - η : 1.50 or 0.90, Whichever Controls Design
 - DC: Dead Load of Structure Components
 - EH: Horizontal Earth Fill Pressure
 - EV: Vertical Earth Pressure from Earth Fill Weight
 - LS: Live Load Surcharge
 - EQE: Seismic Earth Pressure
 - EQD: Soil and Structural and Nonstructural Components Inertia
 - CT: Vehicular Collision Force

NOTES:

- At @ bars:
 - $H \leq 6'$, no splices are allowed within 1'-8" above the top of footing.
 - $H > 6'$, no splices are allowed within H/4 above the top of footing.
- Provide #6 @ 8" @ bars in addition to tabulated @ bars over a distance of 8'-0" measured from all expansion joints, begin wall and end wall locations.



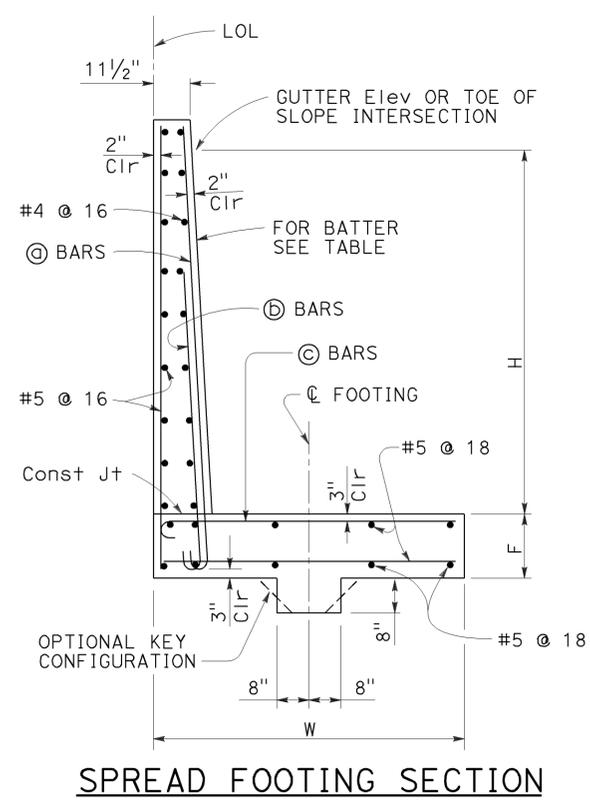
ELEVATION

SYMBOLS:

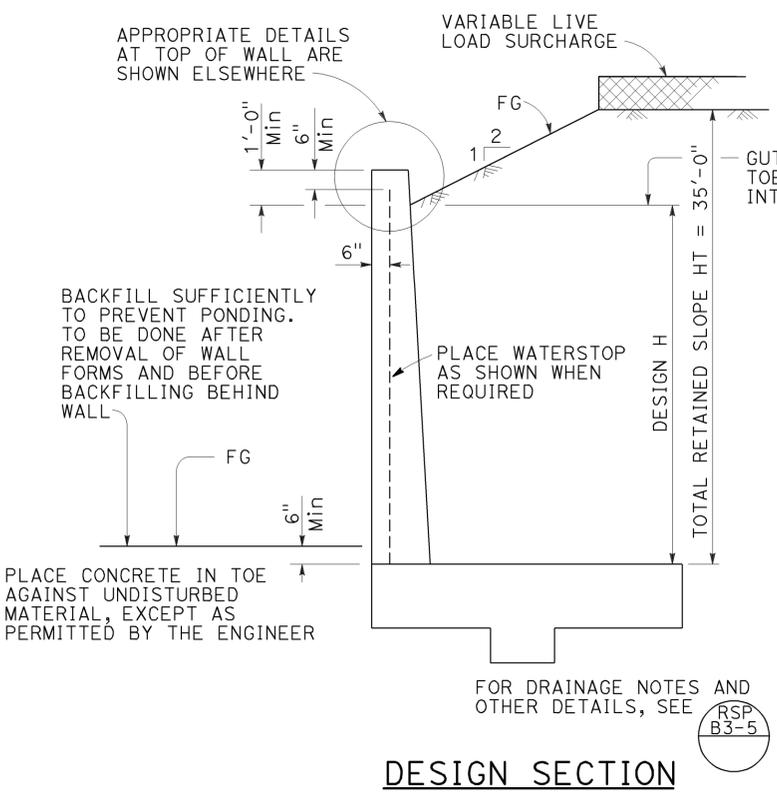
- Ser - service limit state I
- Str - strength limit state I
- Ext I - extreme event limit state I
- Ext II - extreme event limit state II
- B' - effective footing width (ft)
- q_0 - net bearing stress (ksf), OG assumed to be FG at toe
- q_o - gross uniform bearing stress (ksf)

TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA					
DESIGN H	4'	6'	8'	10'	12'
W	7'-3"	7'-9"	8'-6"	9'-6"	10'-6"
BATTER	NONE	NONE	100 : 2	100 : 3	100 : 4
@ BARS	#7 @ 12	#7 @ 10	#7 @ 12	#7 @ 12	#7 @ 10
Ⓞ BARS	#7 @ 12	#7 @ 10	#8 @ 12	#9 @ 12	#10 @ 10
Ser: B', q_0	6.2, 1.4	6.1, 1.8	6.4, 2.1	7.0, 2.5	7.7, 2.8
Str: B', q_o	6.2, 2.4	6.1, 2.9	5.3, 3.0	6.0, 3.5	6.6, 4.0
Ext I: B', q_o	4.4, 1.5	4.1, 2.2	4.0, 3.1	4.1, 3.9	4.2, 4.8
Ext II: B', q_o	2.5, 2.7	3.1, 3.0	3.8, 3.2	4.9, 3.3	5.8, 3.5

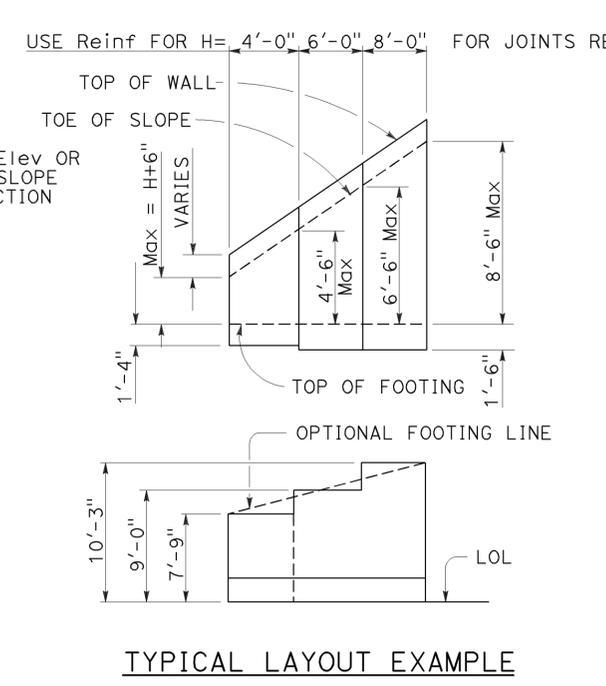
TO ACCOMPANY PLANS DATED 2-23-15



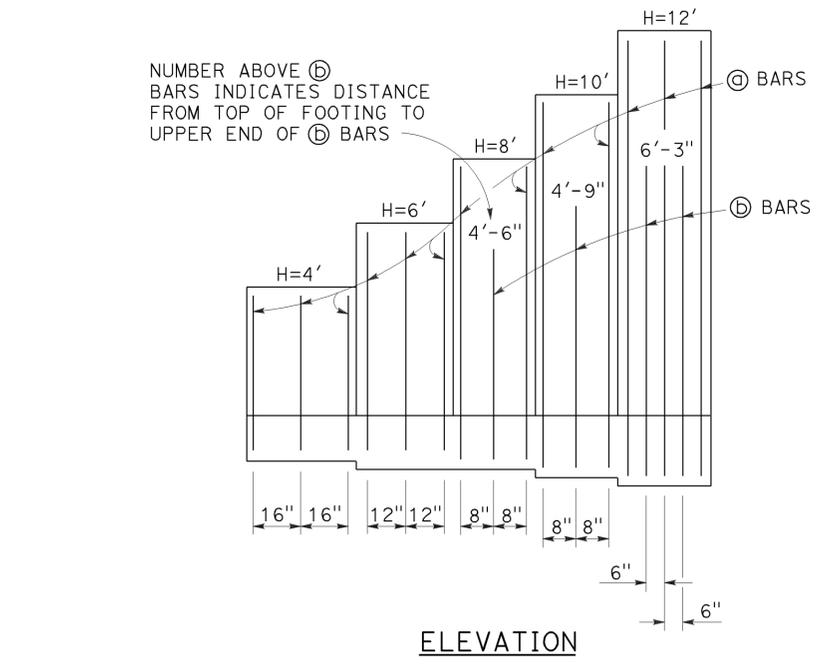
SPREAD FOOTING SECTION



DESIGN SECTION



TYPICAL LAYOUT EXAMPLE



ELEVATION

SYMBOLS:

- Ser - service limit state I
- Str - strength limit state I
- Ext - extreme event limit state I
- B' - effective footing width (ft)
- q'0 - net bearing stress (ksf), OG assumed to be FG at toe
- q0 - gross uniform bearing stress (ksf)

DESIGN H	4'	6'	8'	10'	12'
W	7'-9"	9'-0"	10'-3"	11'-6"	13'-3"
F SPREAD FOOTING	1'-4"	1'-6"	1'-6"	1'-6"	1'-10"
BATTER	NONE	NONE	NONE	100 : 3	100 : 5
⊙ BARS	#5 @ 16	#5 @ 12	#5 @ 16	#6 @ 16	#5 @ 12
⊕ BARS	NONE	NONE	#6 @ 16	#6 @ 16	#6 @ 12
⊙ BARS	#7 @ 8	#7 @ 12	#8 @ 8	#9 @ 8	#10 @ 6
Ser: B', q'0	5.2,1.3	6.0,1.8	9.1,1.8	10.0,2.3	11.4,2.7
Str: B', q0	3.6,2.2	4.1,2.8	4.8,3.4	5.5,3.9	6.7,4.3
Ext: B', q0	3.7,2.9	3.6,4.5	3.7,5.9	3.9,7.2	4.4,8.4

DESIGN CONDITIONS:

Design H may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in the table.

DESIGN NOTES:

- DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments
- LS: Varied surcharge on level ground surface
- DC: Stem Architectural Treatment of thickness up to 6" of concrete (75 psf) considered
- SEISMIC: $k_h = 0.2$
 $k_v = 0.0$
- SOIL: $\phi = 34^\circ$
 $\gamma = 120$ pcf
- REINFORCED CONCRETE: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi
- LOAD COMBINATIONS AND LIMIT STATES:
Service I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00LS$
Strength I $Q = \alpha DC + \beta EV + \eta EH + 1.75LS$
Extreme I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00EQD + 1.00EQE$

Where:

- Q: Force Effects
- α : 1.25 or 0.90, Whichever Controls Design
- β : 1.35 or 1.00, Whichever Controls Design
- η : 1.50 or 0.90, Whichever Controls Design
- DC: Dead Load of Structure Components
- EH: Horizontal Earth Fill Pressure
- EV: Vertical Earth Pressure from Earth Fill Weight
- LS: Live Load Surcharge
- EQE: Seismic Earth Pressure
- EQD: Soil and Structural and Nonstructural Components Inertia

NOTES:

1. At ⊙ and ⊕ bars:
 $H \leq 6'$, no splices are allowed within 1'-8" above the top of footing.
 $H > 6'$, no splices are allowed within H/4 above the top of footing.

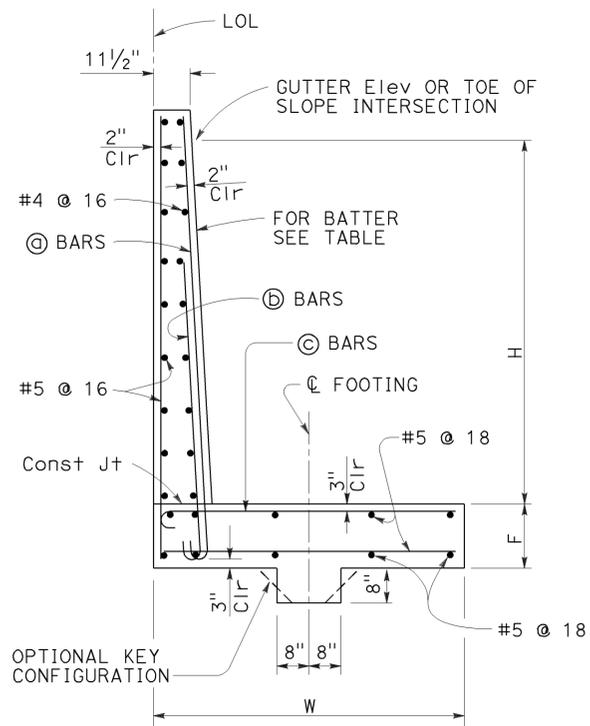
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
RETAINING WALL TYPE 5 (CASE 2)
NO SCALE

RSP B3-4B DATED APRIL 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

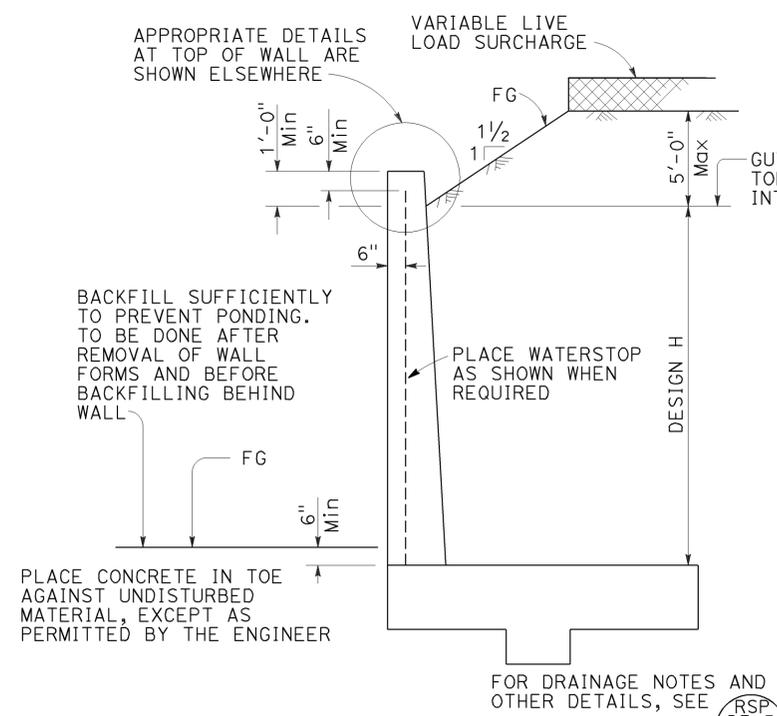
2010 REVISED STANDARD PLAN RSP B3-4B

TO ACCOMPANY PLANS DATED 2-23-15

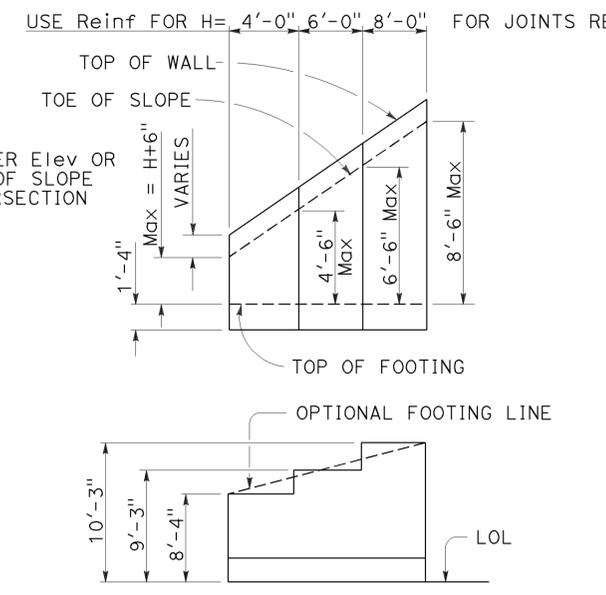
2010 REVISED STANDARD PLAN RSP B3-4C



SPREAD FOOTING SECTION



DESIGN SECTION



TYPICAL LAYOUT EXAMPLE

DESIGN CONDITIONS:

Design H may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in the table.

DESIGN NOTES:

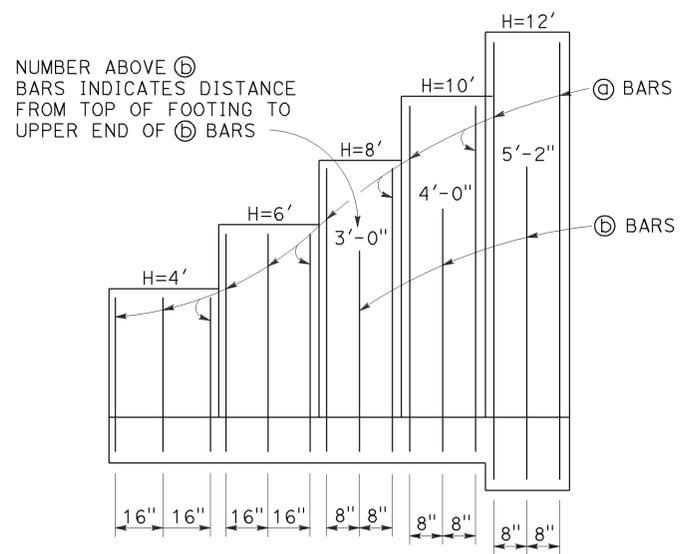
- DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments
- LS: Varied surcharge on level ground surface
- DC: Stem Architectural Treatment of thickness up to 6" of concrete (75 psf) considered
- SEISMIC: $k_h = 0.2$
 $k_v = 0.0$
- SOIL: $\phi = 34^\circ$
 $\gamma = 120$ pcf
- REINFORCED CONCRETE: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi

- LOAD COMBINATIONS AND LIMIT STATES:**
- Service I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00LS$
 - Strength I $Q = \alpha DC + \beta EV + \eta EH + 1.75LS$
 - Extreme I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00EQD + 1.00EQE$

- Where:
- Q: Force Effects
 - a: 1.25 or 0.90, Whichever Controls Design
 - β : 1.35 or 1.00, Whichever Controls Design
 - η : 1.50 or 0.90, Whichever Controls Design
 - DC: Dead Load of Structure Components
 - EH: Horizontal Earth Fill Pressure
 - EV: Vertical Earth Pressure from Earth Fill Weight
 - LS: Live Load Surcharge
 - EQE: Seismic Earth Pressure
 - EQD: Soil and Structural and Nonstructural Components Inertia

NOTES:

1. At @ and @ bars:
 $H \leq 6'$, no splices are allowed within 1'-8" above the top of footing.
 $H > 6'$, no splices are allowed within H/4 above the top of footing.



ELEVATION

SYMBOLS:

- Ser - service limit state I
- Str - strength limit state I
- Ext - extreme event limit state I
- B' - effective footing width (ft)
- q'_0 - net bearing stress (ksf), OG assumed to be FG at toe
- q_0 - gross uniform bearing stress (ksf)

TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA					
DESIGN H	4'	6'	8'	10'	12'
W	8'-4"	9'-3"	10'-3"	11'-0"	12'-4"
F SPREAD FOOTING	1'-4"	1'-4"	1'-4"	1'-4"	1'-7"
BATTER	NONE	NONE	NONE	100 : 3	100 : 5
@ BARS	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16
@ BARS	NONE	NONE	#5 @ 16	#5 @ 16	#5 @ 16
@ BARS	#6 @ 8	#7 @ 8	#8 @ 8	#9 @ 8	#9 @ 8
Ser: B', q'_0	5.6, 1.4	6.4, 1.8	7.4, 2.2	7.8, 2.6	8.9, 3.0
Str: B', q_0	3.6, 2.4	4.2, 3.0	5.0, 3.4	5.3, 4.0	6.4, 4.2
Ext: B', q_0	4.4, 2.1	4.2, 3.0	4.2, 4.0	3.9, 5.5	4.2, 6.7

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
RETAINING WALL TYPE 5 (CASE 3)
NO SCALE

RSP B3-4C DATED APRIL 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP B3-4C

TO ACCOMPANY PLANS DATED 2-23-15

2010 REVISED STANDARD PLAN RSP B3-5

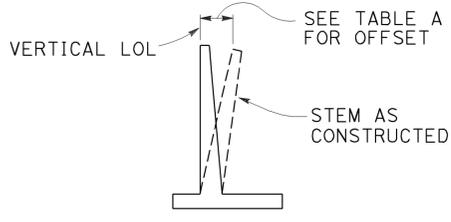
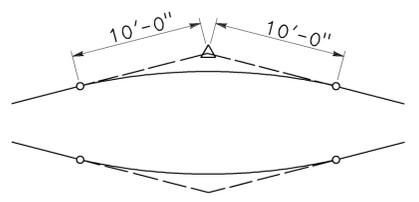


TABLE A

H	OFFSET
4'-12'	H/200
14'-16'	H/160
18'-20'	H/140
22'-24'	H/130
26'-36'	2 1/2"

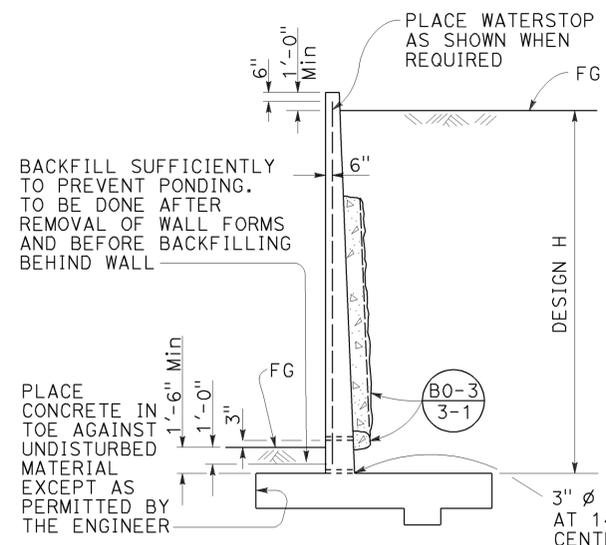
APPROXIMATE WALL OFFSET VALUES

Values for offsetting forms to be determined by the Engineer.



20'-0" VC AT TOP OF WALL SLOPE CHANGE

Where shown on the plans

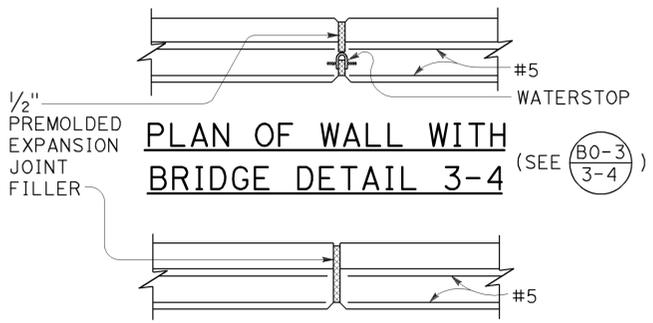


DESIGN AND DRAINAGE

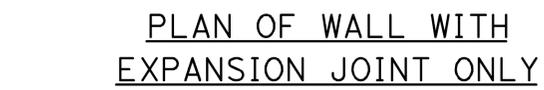
BACKFILL SUFFICIENTLY TO PREVENT PONDING. TO BE DONE AFTER REMOVAL OF WALL FORMS AND BEFORE BACKFILLING BEHIND WALL.

PLACE CONCRETE IN TOE AGAINST UNDISTURBED MATERIAL EXCEPT AS PERMITTED BY THE ENGINEER

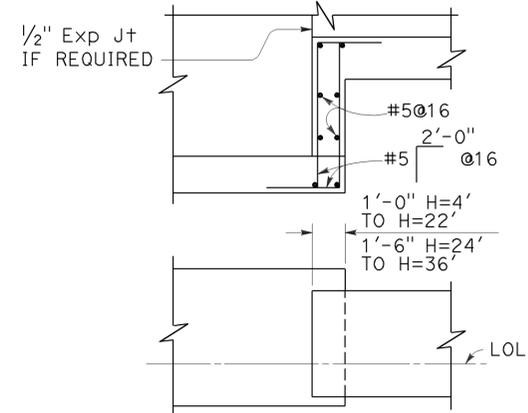
PLACE WATERSTOP AS SHOWN WHEN REQUIRED



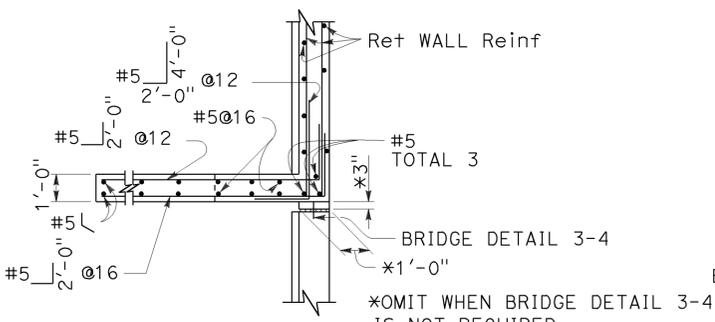
PLAN OF WALL WITH BRIDGE DETAIL 3-4



PLAN OF WALL WITH EXPANSION JOINT ONLY

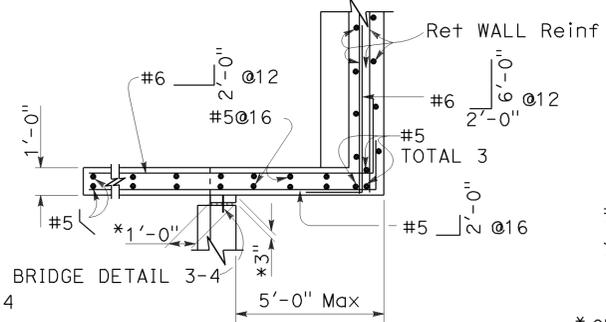


FOOTING STEP



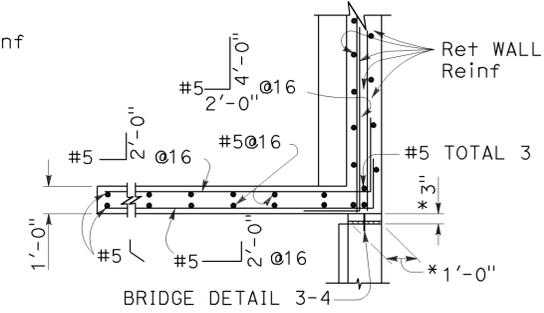
PLAN

(For return wall Type "A")



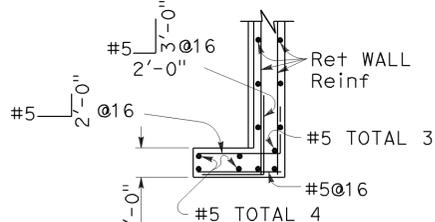
PLAN

(For return wall Type "B")



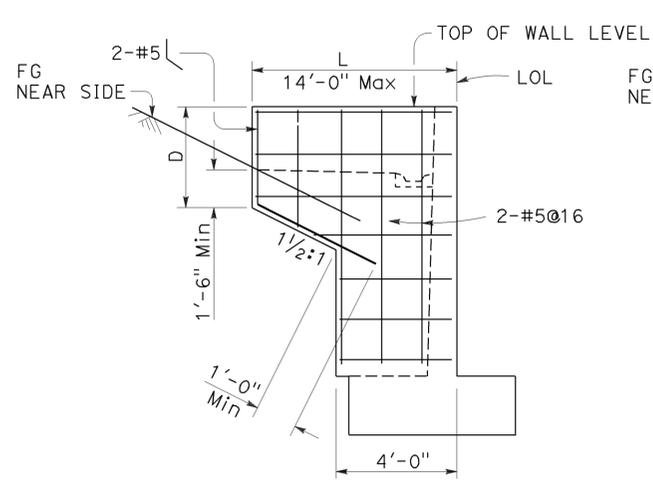
PLAN

(For return wall Type "C")



PLAN

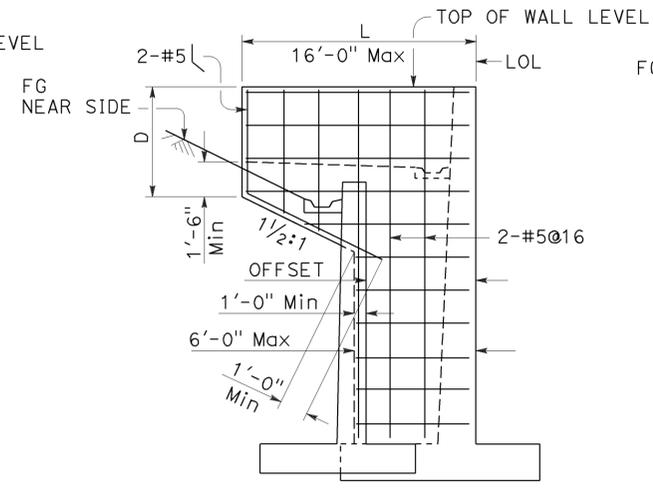
(For return wall Type "D")



ELEVATION

RETURN WALL TYPE "A"

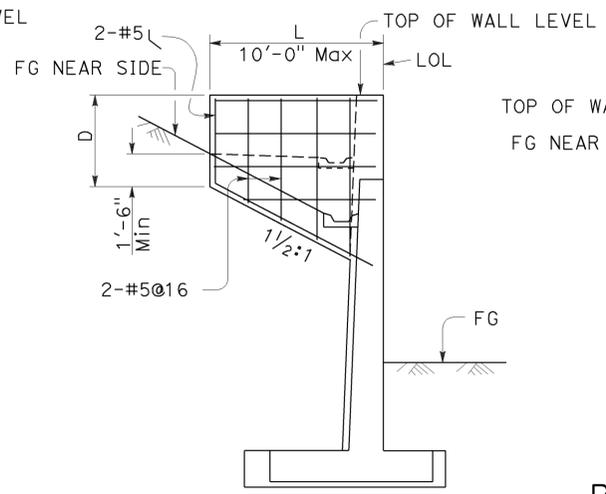
Use where H=8' or less



ELEVATION

RETURN WALL TYPE "B"

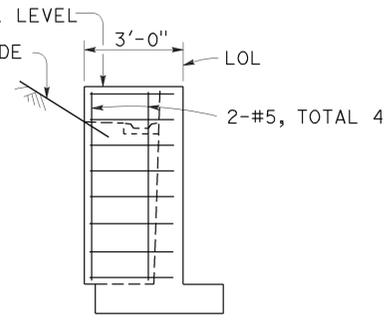
Use where H=10' or more on offset walls



ELEVATION

RETURN WALL TYPE "C"

Use where H=10' or more on straight walls



ELEVATION

RETURN WALL TYPE "D"

Use where H=6' or less

DESIGN CONDITIONS:

Design "H" may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in table

Return wall not required unless shown elsewhere

DESIGN NOTES:

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th edition with California Amendments

LIVE LOAD: Surcharge on level ground surface

SOIL: $\phi = 34^\circ$
 $\gamma = 120$ pcf

REINFORCED CONCRETE: $f_y = 60,000$ psi
 $f_c' = 3,600$ psi

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

RETAINING WALL DETAILS No. 1

NO SCALE

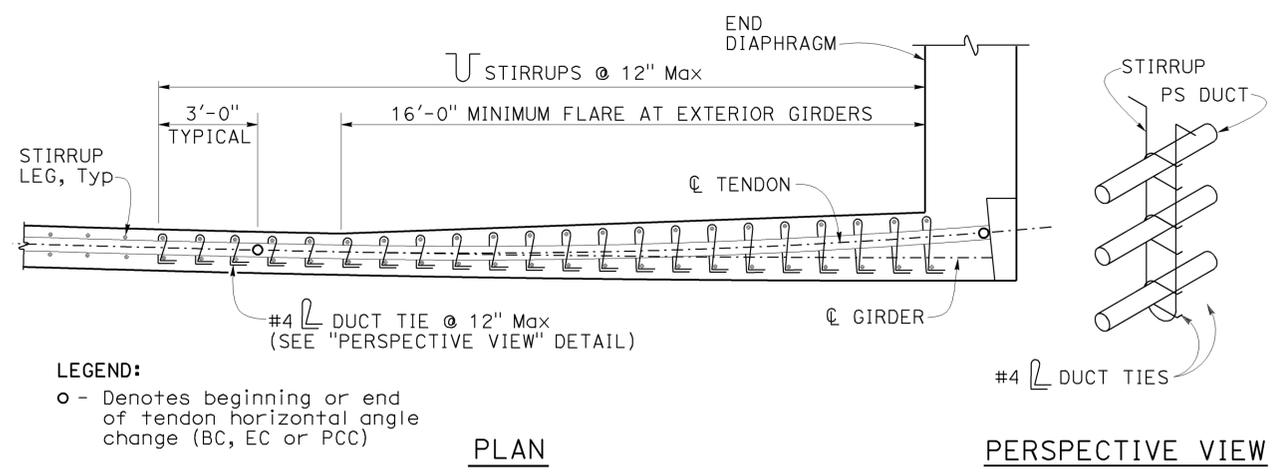
RSP B3-5 DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN B3-5 DATED MAY 20, 2011 - PAGE 277 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP B3-5

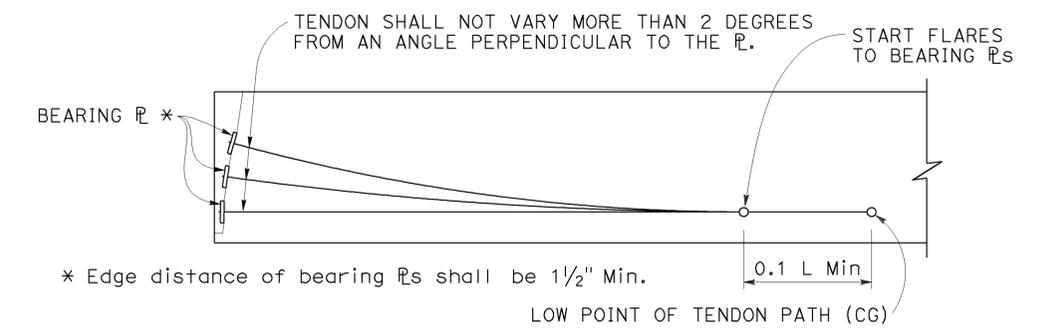
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	718	814

REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 Marc Friedheim
 No. C57968
 Exp. 6-30-14
 CIVIL
 STATE OF CALIFORNIA



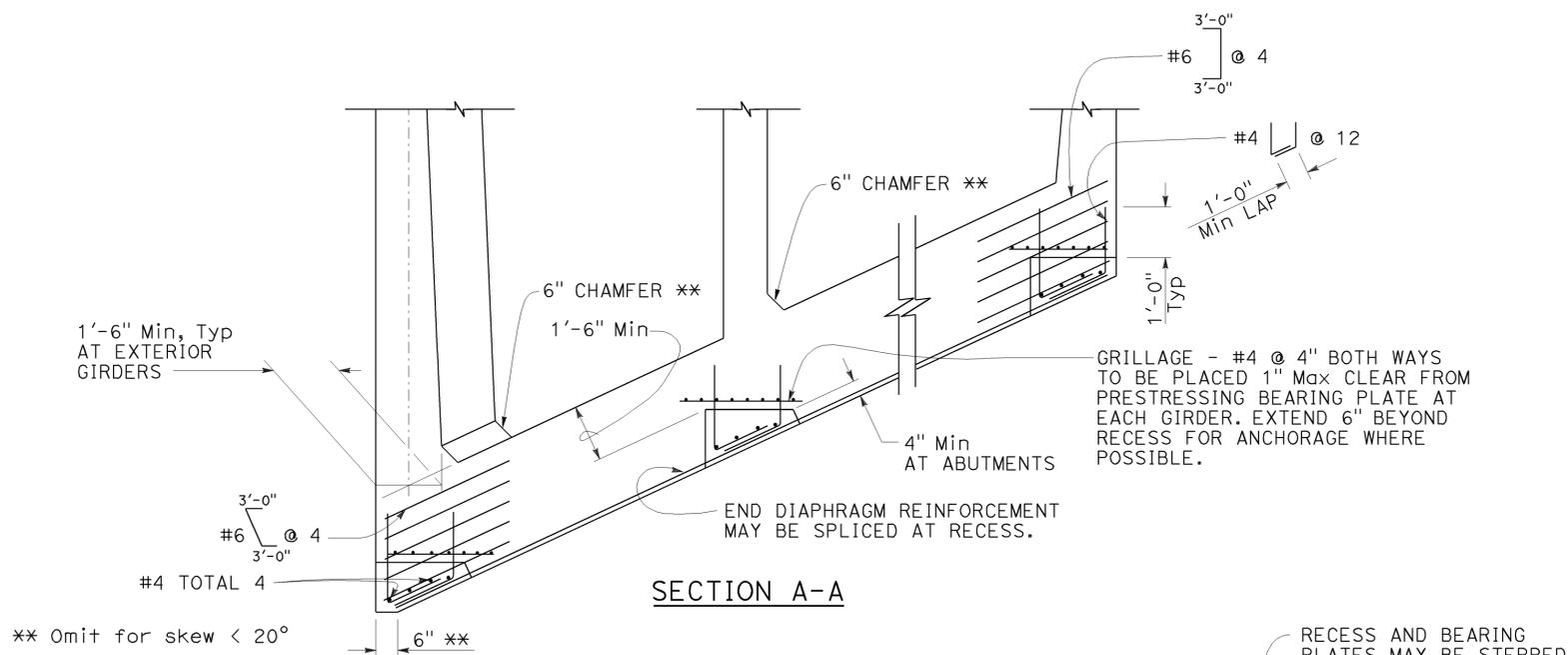
DUCT TIES AT TENDON HORIZONTAL ANGLE CHANGES
DETAIL 5-1



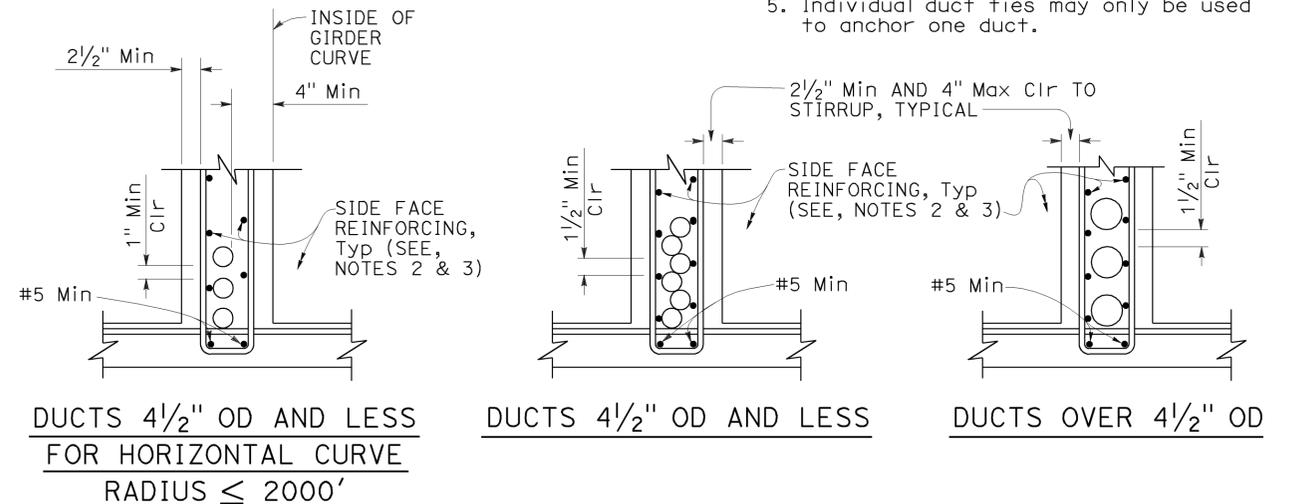
ELEVATION - BEARING PLATE AND PRESTRESSING PATH
DETAIL 5-2

LEGEND:
 o - Denotes beginning or end of tendon horizontal angle change (BC, EC or PCC)

- TO ACCOMPANY PLANS DATED 2-23-15
- NOTES FOR DETAIL 5-1**
1. Tendon horizontal angle change at end diaphragm shown. Duct tie placement similar for other locations where tendon horizontal angle changes occur. For curved girders place duct ties at tendon angle changes where tendon radius is smaller than tendon girder radius.
 2. Adjacent duct ties may be staggered to facilitate placement if stirrup spacing is less than 12 inches.
 3. Place closed end of duct ties toward inside of tendon curve.
 4. Wrap duct ties around both stirrup legs.
 5. Individual duct ties may only be used to anchor one duct.



PRESTRESS ANCHORAGE DETAILS AT END DIAPHRAGMS
DETAIL 5-3



CLEARANCE REQUIREMENTS FOR DUCTS
DETAIL 5-4

- NOTES FOR DETAIL 5-4:**
1. Stirrups may also be used.
 2. For additional details, see Standard Plan B7-1, and Project Plans.
 3. Bar reinforcing which interferes with prestressing ducts may be adjusted as approved by the Engineer.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

CAST-IN-PLACE POST-TENSIONED GIRDER DETAILS
 NO SCALE

RSP B8-5 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN B8-5 DATED MAY 20, 2011 - PAGE 291 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP B8-5

2010 REVISED STANDARD PLAN RSP B8-5

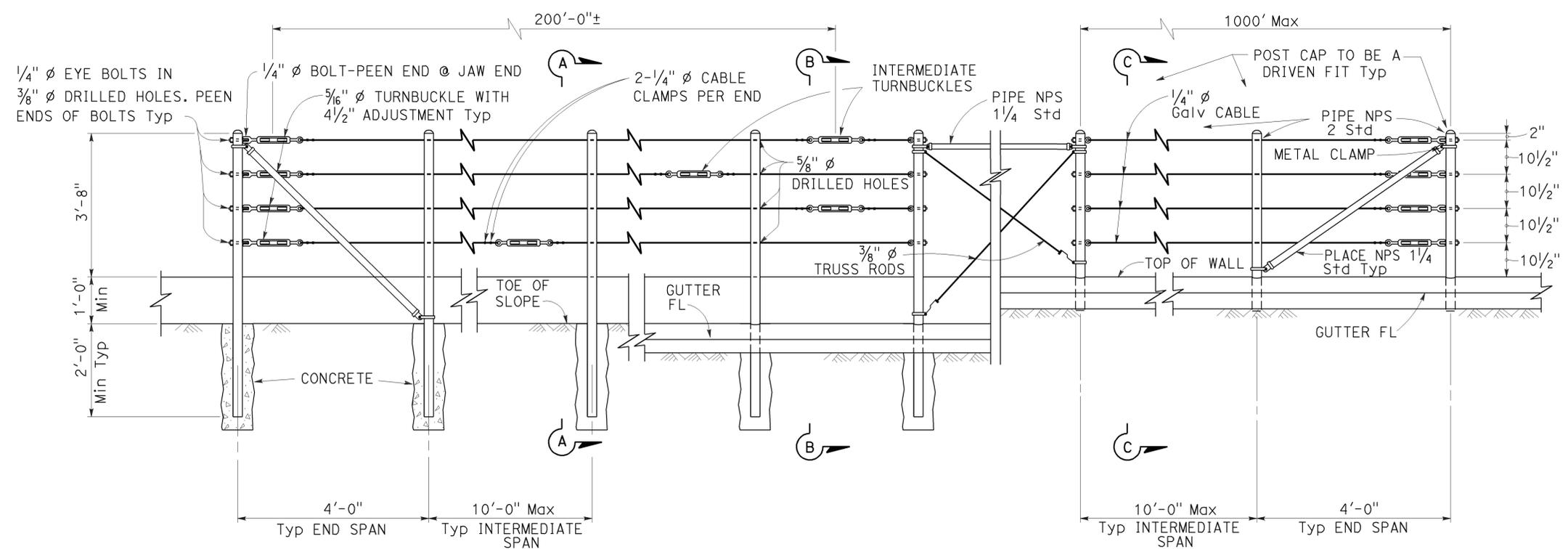
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	719	814

REGISTERED CIVIL ENGINEER

October 21, 2011
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
Tillett Satter
No. C42892
Exp. 3-31-12
CIVIL
STATE OF CALIFORNIA

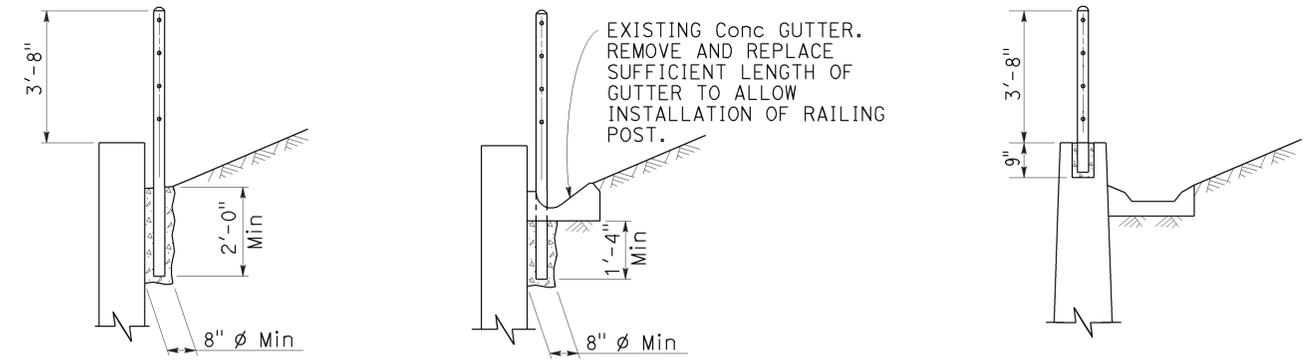


EXISTING WALL (WITHOUT GUTTER) Existing
RETAINING WALL (WITH GUTTER) Existing
RETAINING WALL (WITH GUTTER) New construction

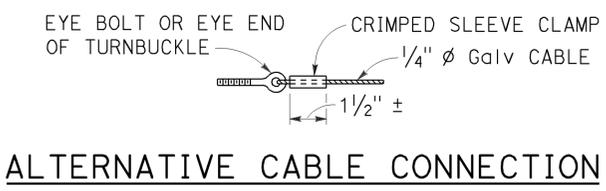
ELEVATION

NOTES:

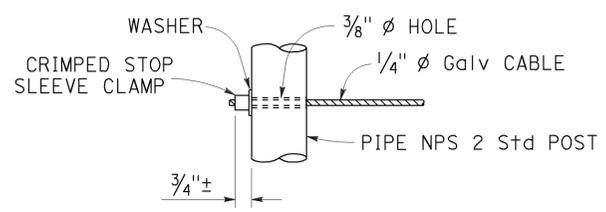
1. Maximum distance between turnbuckles shall be 200'-0"±.
2. Intermediate turnbuckles to be placed in adjacent spans.
3. Cable shall not be spliced between intermediate turnbuckles and end posts.
4. Posts to be vertical.
5. Alignment of holes in posts may vary to conform to slope of top of retaining wall.
6. The Contractor shall verify all dependent dimensions in the field before ordering or fabricating any material.
7. Line posts shall be braced horizontally and trussed diagonally in both directions at intervals not to exceed 1000'.
8. Post pockets to be centered in top of wall.
9. Typical end spans, braced in both directions, shall be constructed at changes in line where the angle of deflection is 15° or more.
10. Provide thimbles at all cable loops.



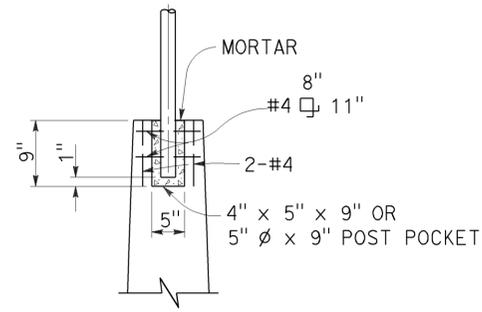
SECTION A-A Existing
SECTION B-B Existing
SECTION C-C New construction



ALTERNATIVE CABLE CONNECTION



ALTERNATIVE DEAD END ANCHORAGE



POST POCKET

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CABLE RAILING

NO SCALE

RSP B11-47 DATED OCTOBER 21, 2011 SUPERSEDES STANDARD PLAN B11-47 DATED MAY 20, 2011 - PAGE 293 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP B11-47

2010 REVISED STANDARD PLAN RSP B11-47

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	721	814

REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

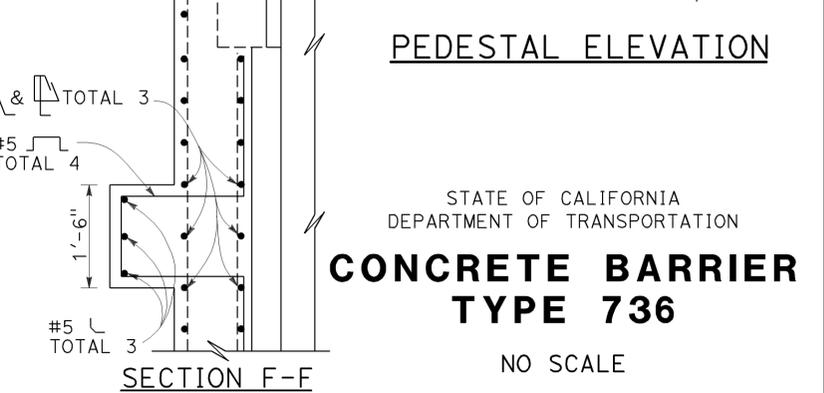
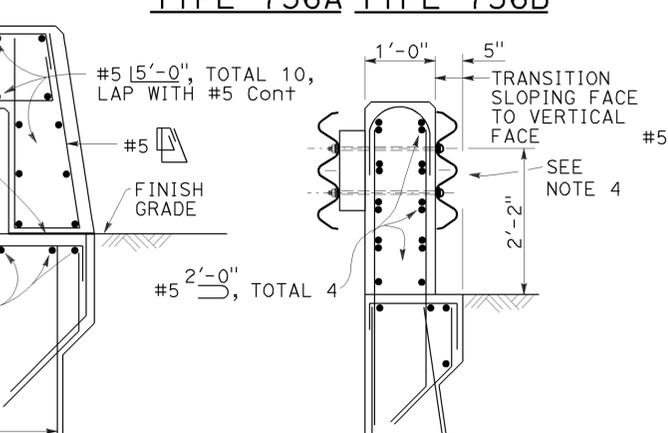
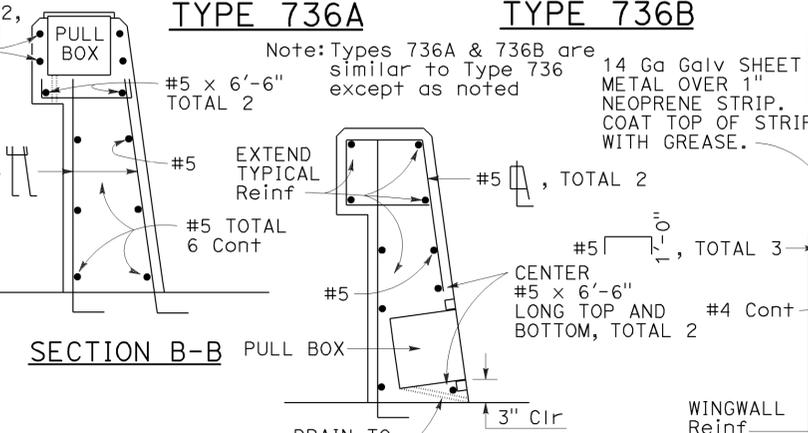
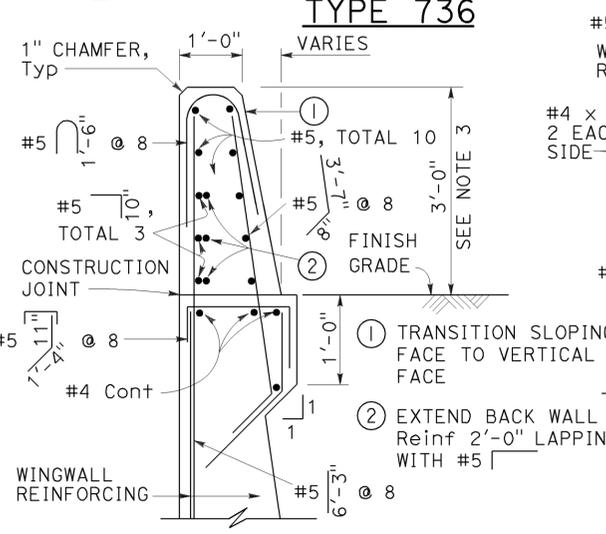
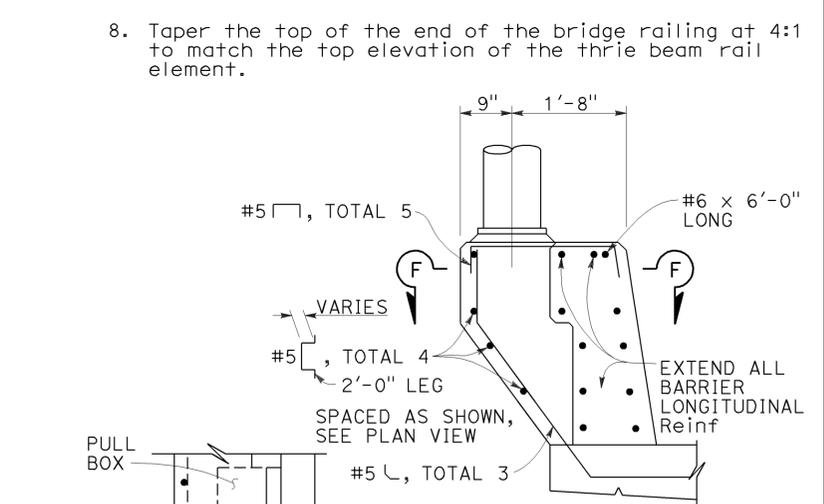
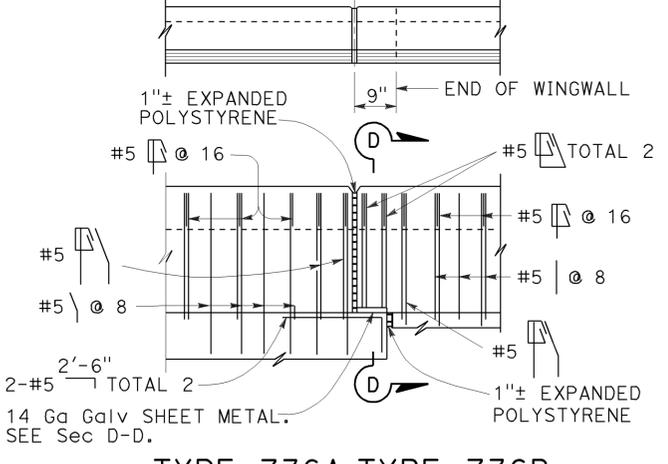
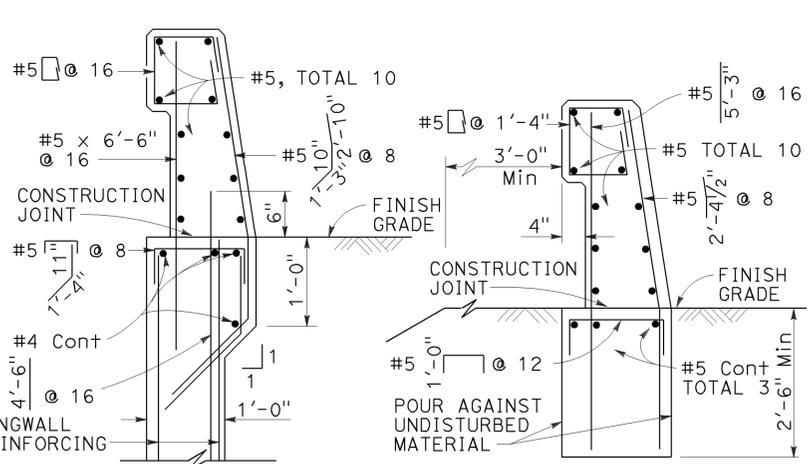
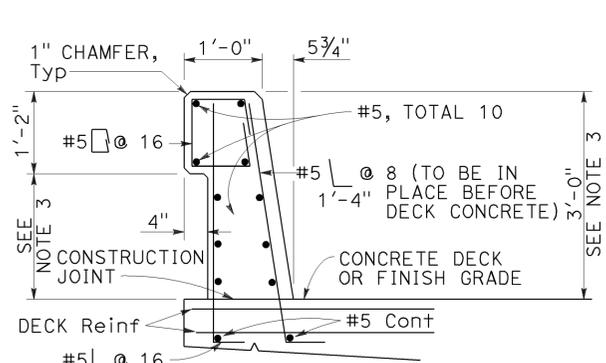
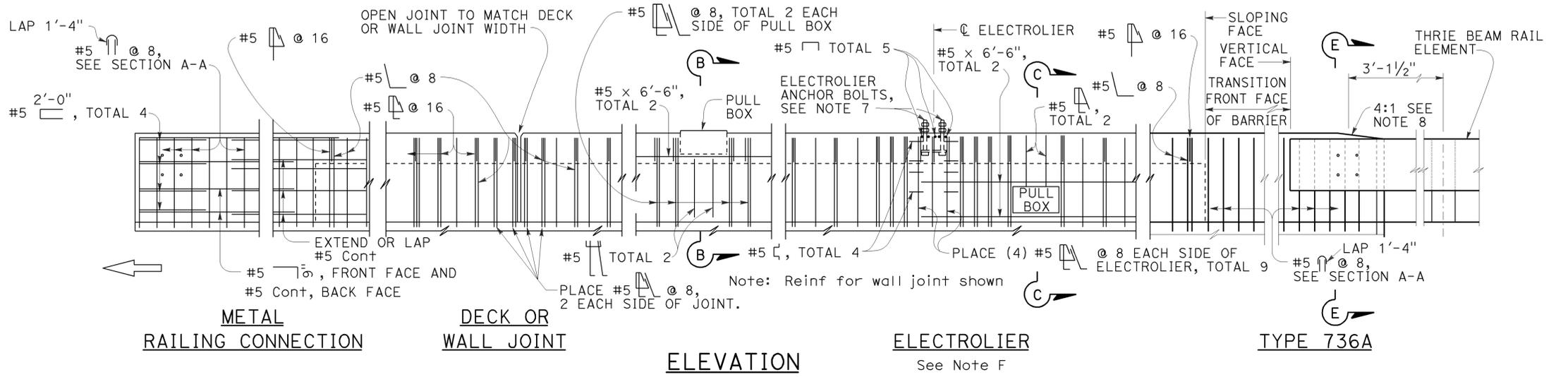
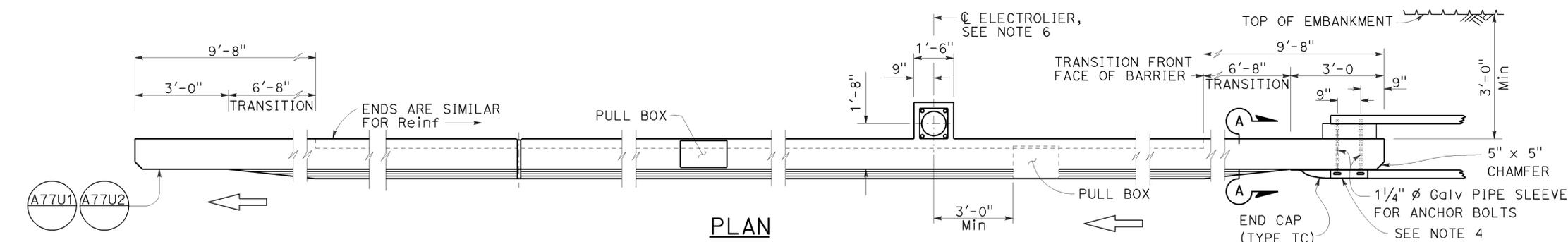
REGISTERED PROFESSIONAL ENGINEER
Tillot Satter
No. C42892
Exp. 3-31-14
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 2-23-15

NOTES:

1. Walls are to be backfilled before barrier is placed.
2. Clearance to reinforcing steel in barrier to be 1", except as noted. Longitudinal reinforcement to stop at all expansion joints.
3. Dimensions may vary with roadway cross slope and with certain thickness of surfacing. See Project Plans.
4. For typical metal railing connection details not shown, see Revised Standard Plans RSP A77U1 and RSP A77U2.
5. See Standard Plans ES-9A, ES-9B, ES-9C, ES-9D and ES-9E for electrical details. The maximum number of conduits in the barrier is limited to two 2" conduits along with one 3" conduit. When a 3" conduit is used, it is restricted to the base of the barrier.
6. For electrolier mounting details, See Standard Plans ES-6A and ES-6B.
7. Minimum concrete edge distance, to the reinforcing shown, shall be maintained. Edge distance may be adjusted to accommodate increase in concrete cover for architectural treatment.
8. Taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail element.

2010 REVISED STANDARD PLAN RSP B11-56



SECTION A-A
Details shown for barrier anchorage to Type 736A. Anchorage for barrier Types 736 and 736B are similar to their respective details.

SECTION B-B
Note: Types 736A & 736B are similar to Type 736 except as noted.

SECTION D-D
Note: Types 736A & 736B are similar to Type 736 except as noted.

SECTION F-F
NO SCALE

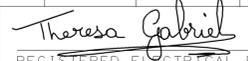
RSP B11-56 DATED NOVEMBER 15, 2013 SUPERSEDES RSP B11-56 DATED JULY 19, 2013 AND STANDARD PLAN B11-56 DATED MAY 20, 2011 - PAGE 298 OF THE STANDARD PLANS BOOK DATED 2010.
REVISED STANDARD PLAN RSP B11-56

LEGEND:

AB	ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
BC	INSTALL PULL BOX IN EXISTING CONDUIT RUN
BP	PEDESTRIAN BARRICADE, TYPE AS INDICATED ON PLAN
CB	INSTALL CONDUIT INTO EXISTING PULL BOX
CC	CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
CF	CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS. INSTALL PULL TAPE
DH	DETECTOR HANDHOLE
FA	FOUNDATION TO BE ABANDONED
IS	INSTALL SIGN ON SIGNAL MAST ARM
NS	NO SLIP BASE ON STANDARD
PEC	PHOTOELECTRIC CONTROL
PEU	PHOTOELECTRIC UNIT
RC	EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR
RE	REMOVE ELECTROLIER, FUSES AND BALLAST. TAPE ENDS OF CONDUCTORS
RL	RELOCATE EQUIPMENT
RR	REMOVE AND REUSE EQUIPMENT
RS	REMOVE AND SALVAGE EQUIPMENT
SC	SPLICE NEW TO EXISTING CONDUCTORS
SD	SERVICE DISCONNECT
TSP	TELEPHONE SERVICE POINT

ABBREVIATIONS

APS	ACCESSIBLE PEDESTRIAN SIGNAL	M/M	MULTIPLE TO MULTIPLE TRANSFORMER
BBS	BATTERY BACKUP SYSTEM	Mtg	MOUNTING
BC	BOLT CIRCLE	MV	MERCURY VAPOR LIGHTING FIXTURE
BPB	BICYCLE PUSH BUTTON	MVDS	MICROWAVE VEHICLE DETECTION SYSTEM
C	CONDUIT	N	NEUTRAL (GROUNDED CONDUCTOR)
CB	CIRCUIT BREAKER	NB	NEUTRAL BUS
CCTV	CLOSED CIRCUIT TELEVISION	NC	NORMALLY CLOSE
Ck+	CIRCUIT	NO	NORMALLY OPEN
CMS	CHANGEABLE MESSAGE SIGN	P	CIRCUIT BREAKER'S POLE
Ctid	CALTRANS IDENTIFICATION	PB	PULL BOX
Comm	COMMUNICATION	PBA	PUSH BUTTON ASSEMBLY
DLC	LOOP DETECTOR LEAD-IN CABLE	PEC	PHOTOELECTRIC CONTROL
EMS	EXTINGUISHABLE MESSAGE SIGN	Ped	PEDESTRIAN
EVUC	EMERGENCY VEHICLE UNIT CABLE	PEU	PHOTOELECTRIC UNIT
EVUD	EMERGENCY VEHICLE UNIT DETECTOR	PT	CONDUIT WITH PULL TAPE
FB	FLASHING BEACON	RE	RELOCATED EQUIPMENT
FBCA	FLASHING BEACON CONTROL ASSEMBLY	RM	RAMP METERING
FBS	FLASHING BEACON WITH SLIP BASE	RWIS	ROADSIDE WEATHER INFORMATION SYSTEM
FO	FIBER OPTIC	SB	SLIP BASE
G	EQUIPMENT GROUNDING CONDUCTOR	SIC	SIGNAL INTERCONNECT CABLE
GB	GROUND BUS	Sig	SIGNAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SMA	SIGNAL MAST ARM
HAR	HIGHWAY ADVISORY RADIO	SNS	STREET NAME SIGN
Hex	HEXAGONAL	SP	SERVICE POINT
HPS	HIGH PRESSURE SODIUM	TDC	TELEPHONE DEMARCATION CABINET
IISNS	INTERNALLY ILLUMINATED STREET NAME SIGN	TMS	TRAFFIC MONITORING STATION
ISL	INDUCTION SIGN LIGHTING	TOS	TRAFFIC OPERATIONS SYSTEM
LED	LIGHT EMITTING DIODE	Veh	VEHICLE
LMA	LUMINAIRE MAST ARM	VIVDS	VIDEO IMAGE VEHICLE DETECTION SYSTEM
LPS	LOW PRESSURE SODIUM	WIM	WEIGH-IN-MOTION
Ltg	LIGHTING	Xfmr	TRANSFORMER
Lum	LUMINAIRE		
M	METERED		
MAT	MAST ARM MOUNTING TOP ATTACHMENT		
MAS	MAST ARM MOUNTING SIDE ATTACHMENT		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	722	814
 REGISTERED ELECTRICAL ENGINEER July 19, 2013 PLANS APPROVAL DATE THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
					

TO ACCOMPANY PLANS DATED 2-23-15

SOFFIT AND WALL MOUNTED LUMINAIRES

-  PENDANT, 70 W HPS UNLESS OTHERWISE SPECIFIED
-  FLUSH, 70 W HPS UNLESS OTHERWISE SPECIFIED
-  WALL SURFACE, 70 W HPS UNLESS OTHERWISE SPECIFIED
-  EXISTING SOFFIT OR WALL LUMINAIRE TO REMAIN UNMODIFIED
-  EXISTING SOFFIT OR WALL LUMINAIRE TO BE MODIFIED AS SPECIFIED

NOTE:
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

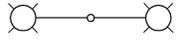
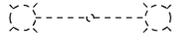
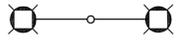
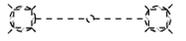
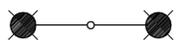
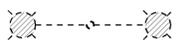
SYMBOL USED	DEFINITIONS
Ω	OHMS
min	MINUTE
s	SECOND
bps	BITS PER SECOND
Bps	BYTES PER SECOND
A	AMPERE
V	VOLT
V(dc)	VOLT (DIRECT CURRENT)
V(ac)	VOLT (ALTERNATING CURRENT)
FC	FOOT - CANDLE
W	WATTS
VA	VOLT-AMPERE
M	MEGA
k	KILO
m	MILLI
μ	MICRO
P	PICO
HZ	HERTZ

MISCELLANEOUS ELECTROLIERS

NEW	EXISTING	
		LUMINAIRE ON WOOD POLE
		NON-STANDARD ELECTROLIER (SEE PROJECT NOTES OR PROJECT PLANS)
		CITY ELECTROLIER
		ELECTROLIER FOUNDATION (FUTURE INSTALLATION)

- NOTES:**
- HPS luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. HPS luminaires shall be 200 W when installed on other type standards or poles, unless otherwise specified.
 - LED luminaires shall be 235 W when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. LED luminaires shall be 165 W when installed on other type standards or poles, unless otherwise specified.
 - Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.

STANDARD ELECTROLIER

NEW	EXISTING	STANDARD TYPE
		15
		15D
		15 STRUCTURE
		15D STRUCTURE
		21
		21D
		21 STRUCTURE
		21D STRUCTURE
		30
		31
		32

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(LEGEND AND ABBREVIATIONS)**
NO SCALE

RSP ES-1A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1A
DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	723	814

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 2-23-15

CONDUIT

SIGNAL EQUIPMENT

NEW	EXISTING	
---	---	LIGHTING CONDUIT, UNLESS OTHERWISE INDICATED OR NOTED
---	---	TRAFFIC SIGNAL CONDUIT
---C---	---c---	COMMUNICATION CONDUIT
---T---	---t---	TELEPHONE CONDUIT
---F---	---f---	FIRE ALARM CONDUIT
---FO---	---fo---	FIBER OPTIC CONDUIT
---	---	CONDUIT TERMINATION
		CONDUIT RISER ATTACHED TO THE STRUCTURE OR SERVICE POLE

NEW	EXISTING	
		PEDESTRIAN SIGNAL HEAD "C" INDICATES COUNTDOWN PEDESTRIAN HEAD
		PUSH BUTTON ASSEMBLY POST
		PEDESTRIAN BARRICADE
		VEHICLE SIGNAL HEAD (WITH BACKPLATE AND 3-SECTIONS: RED, YELLOW AND GREEN)
		VEHICLE SIGNAL HEAD WITH ANGLE VISOR
		MODIFICATIONS OF BASIC SYMBOL: "L" INDICATES ALL NON-ARROW SECTIONS LOUVERED "LG" INDICATES LOUVERED GREEN SECTION ONLY "PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY "8" INDICATES ALL 8" SECTIONS (ONLY WHEN SPECIFIED)

SIGNAL EQUIPMENT Cont

NEW	EXISTING	
		GUARD POST
		TYPE 1 STANDARD WITH RAMP METERING SIGN
		OPTICAL DETECTOR FOR THE EMERGENCY VEHICLE DETECTION SYSTEM

SERVICE EQUIPMENT

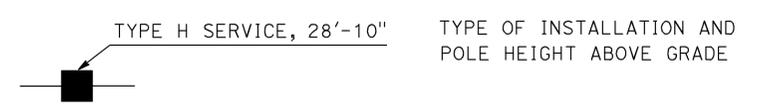
NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

		VEHICLE SIGNAL HEAD CONSISTING OF RED, YELLOW AND GREEN LEFT ARROW SECTIONS
		VEHICLE SIGNAL HEAD CONSISTING OF RED AND YELLOW SECTIONS WITH AN UP GREEN ARROW SECTION
		VEHICLE SIGNAL HEAD (5 SECTION) CONSISTING OF RED, YELLOW AND GREEN SECTIONS WITH YELLOW AND GREEN RIGHT ARROW SECTIONS
		TYPE 15TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		TYPE 21TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		STANDARD WITH LUMINAIRE AND SIGNAL MAST ARMS AND ATTACHED VEHICLE SIGNAL HEADS
		TYPE 1 STANDARD WITH ATTACHED VEHICLE SIGNAL HEADS
		STANDARD WITH A SIGNAL MAST ARM, ATTACHED VEHICLE SIGNAL HEADS AND INTERNALLY ILLUMINATED STREET NAME SIGN
		CONTROLLER ASSEMBLY. DOOR INDICATES FRONT OF CABINET

NOTES:

- All signal sections shall be 12" unless shown otherwise.
- Signal heads shall be provided with backplates unless shown otherwise.

POLE-MOUNTED SERVICE DESIGNATION



ILLUMINATED OVERHEAD SIGN

NEW	EXISTING	
		SINGLE POST, SINGLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, DOUBLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, SINGLE ILLUMINATED SIGN, FULL CANTILEVER
		DOUBLE POST, SINGLE ILLUMINATED SIGN
		SINGLE ILLUMINATED SIGN MOUNTED ON STRUCTURE
		DOUBLE POST, SINGLE ILLUMINATED SIGN WITH ELECTROLIER

FLASHING BEACON

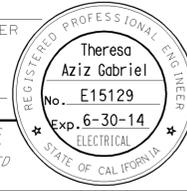
NEW	EXISTING	
		FLASHING BEACON (ONE VEHICLE SIGNAL HEAD WITH BACKPLATE AND VISOR) "R" INDICATES RED INDICATION, "Y" INDICATES YELLOW INDICATION
		FLASHING BEACON WITH TYPE 15-FBS STANDARD AND A SIGN.
		FLASHING BEACON WITH TYPES 9, 9A OR 9B SIGN UNLESS OTHERWISE SPECIFIED OR INDICATED

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (LEGEND AND ABBREVIATIONS)**
 NO SCALE

RSP ES-1B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1B

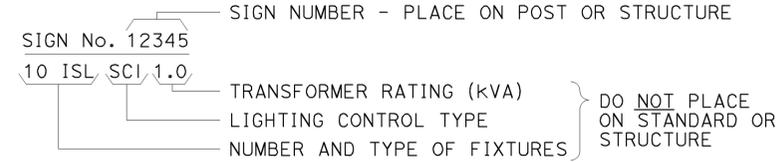
2010 REVISED STANDARD PLAN RSP ES-1B



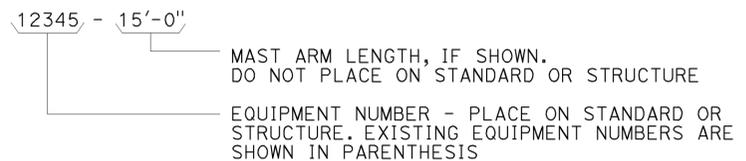
TO ACCOMPANY PLANS DATED 2-23-15

EQUIPMENT IDENTIFICATION

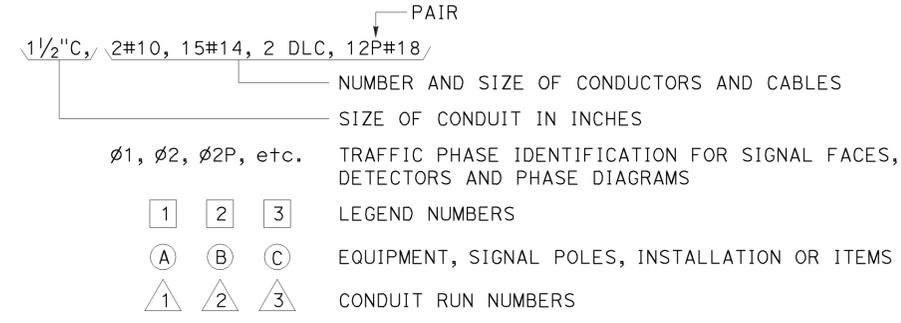
ILLUMINATED SIGN IDENTIFICATION NUMBER:



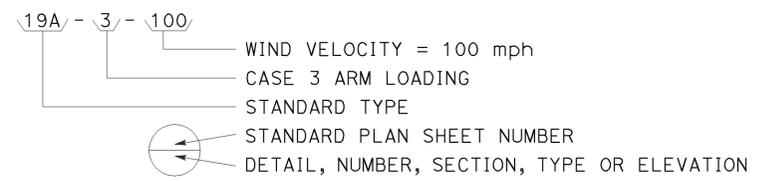
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



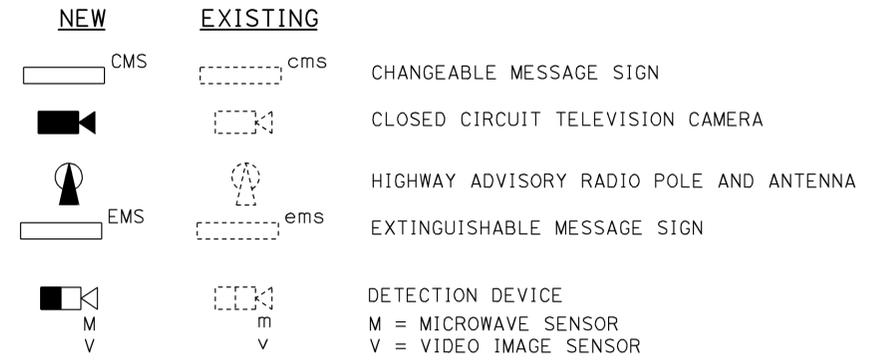
CONDUIT AND CONDUCTOR IDENTIFICATION:



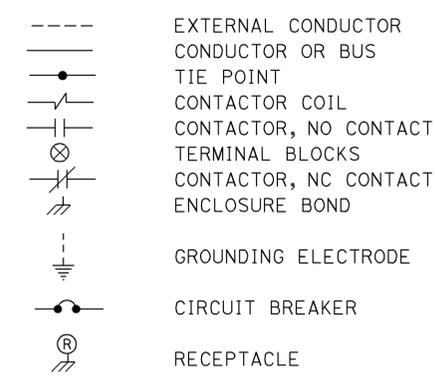
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



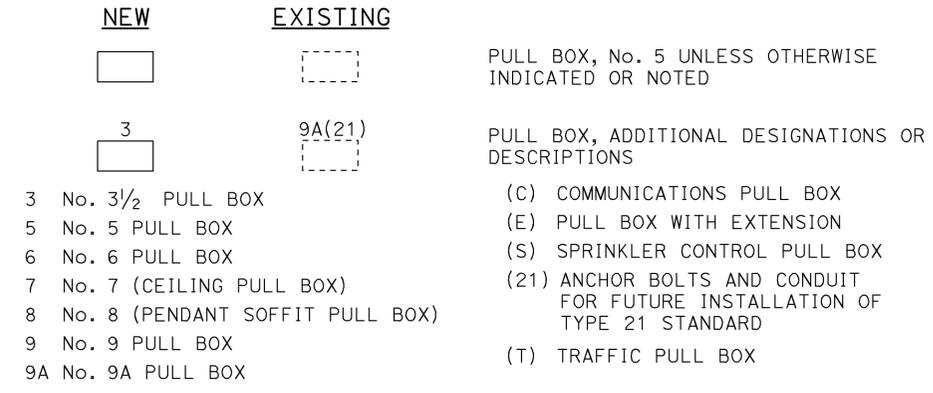
MISCELLANEOUS EQUIPMENT



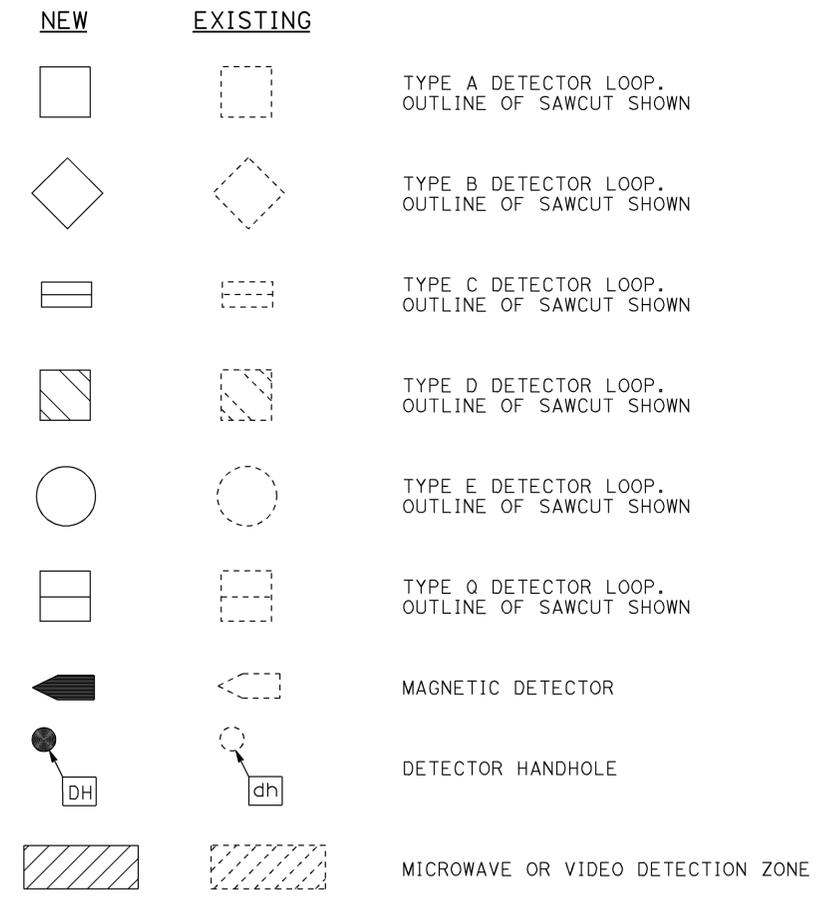
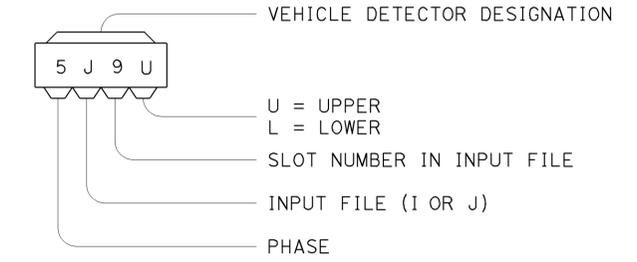
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

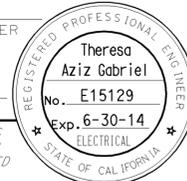
ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1C DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-1C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	725	814
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER					
July 19, 2013 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



TO ACCOMPANY PLANS DATED 2-23-15

PLAN VIEW OF OTHER
SIDE MOUNTINGS

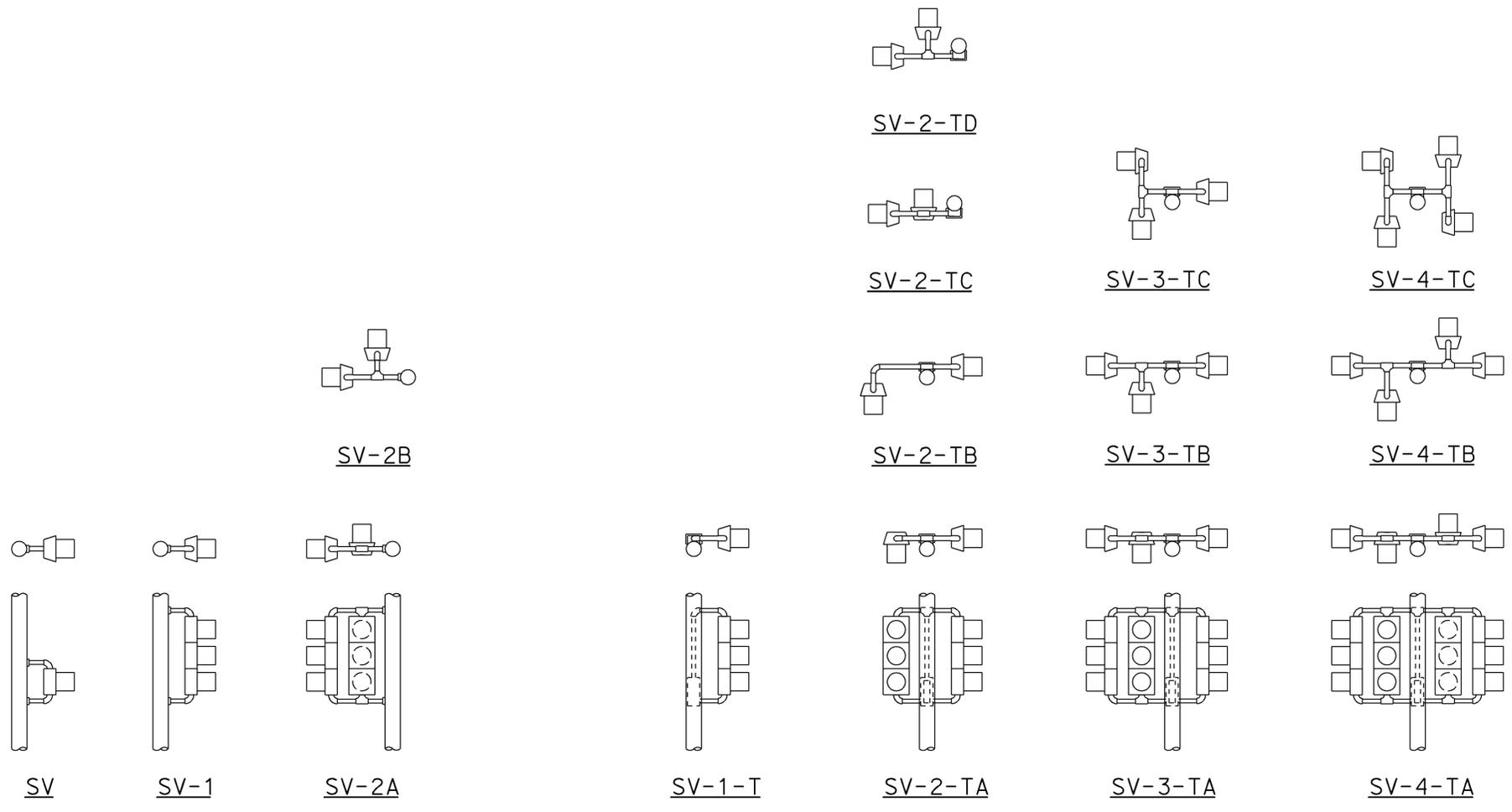
ABBREVIATIONS:

- SV SIDE MOUNTED VEHICLE SIGNALS
- T TERMINAL COMPARTMENT
- TV TOP MOUNTED VEHICLE SIGNALS
- 1, 2, 3, 4 NUMBER OF SIGNAL FACES
(3 - SECTION, UNLESS OTHERWISE INDICATED)
- A, B, C, D CONFIGURATION OF SIGNALS

NOTES:

1. Mountings shall be oriented to provide maximum horizontal clearance to adjacent roadway.
2. Bracket arms shall be long enough to permit proper alignment of signals and backplate installation.
3. See Standard Plans ES-4D and ES-4E for attachment fitting details.

PLAN VIEW OF
TOP MOUNTINGS



SIDE MOUNTINGS

TOP MOUNTINGS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(VEHICULAR SIGNAL HEADS
AND MOUNTINGS)**

NO SCALE

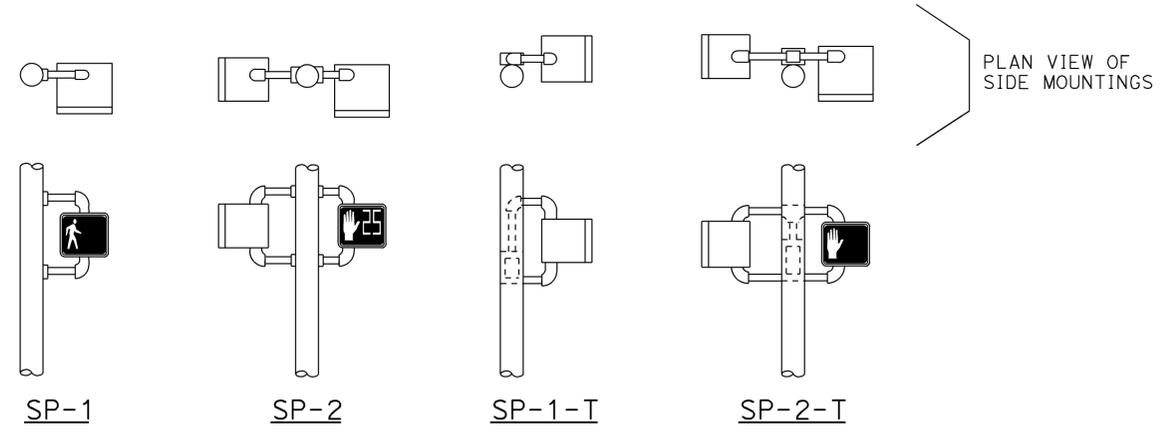
RSP ES-4A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-4A
DATED MAY 20, 2011 - PAGE 443 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-4A

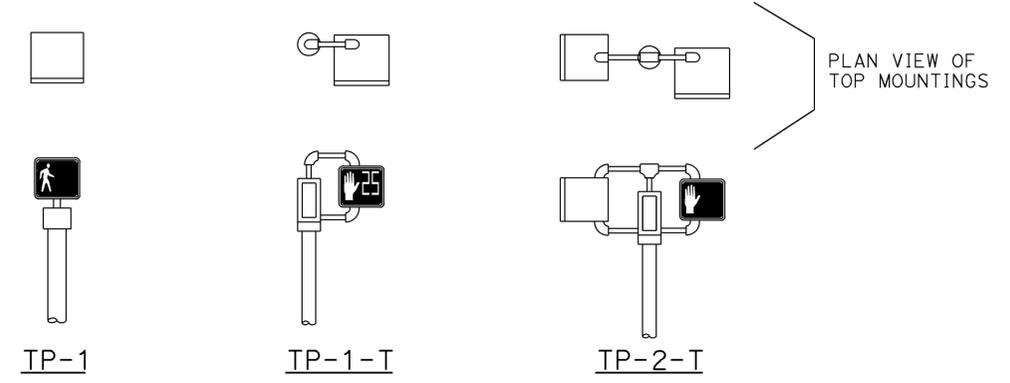
2010 REVISED STANDARD PLAN RSP ES-4A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	726	814
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER					
October 17, 2014 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

TO ACCOMPANY PLANS DATED 2-23-15



SIDE MOUNTINGS



TOP MOUNTINGS

PEDESTRIAN SIGNALS AND MOUNTINGS

DETAIL A

NOTES:

1. Mounting shall be oriented to provide maximum horizontal clearance to adjacent roadway.
2. Bracket arms shall be long enough to permit proper alignment of signals.
3. See Standard Plan ES-4D for attachment fittings details.

ABBREVIATIONS:

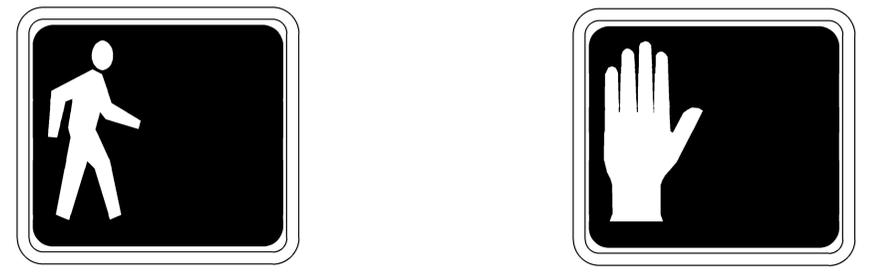
- 1, 2 NUMBER OF SIGNAL FACES
- SP SIDE MOUNTED PEDESTRIAN SIGNAL
- T TERMINAL COMPARTMENT
- TP TOP MOUNTED PEDESTRIAN SIGNAL



PERSON WALKING INTERVAL FLASHING UPRaised HAND INTERVAL STEADY UPRaised HAND INTERVAL

PEDESTRIAN SIGNAL MODULE WITH COUNTDOWN

DETAIL B



PERSON WALKING INTERVAL STEADY UPRaised HAND INTERVAL

PEDESTRIAN SIGNAL MODULE WITHOUT COUNTDOWN

DETAIL C

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (PEDESTRIAN SIGNAL)**

NO SCALE

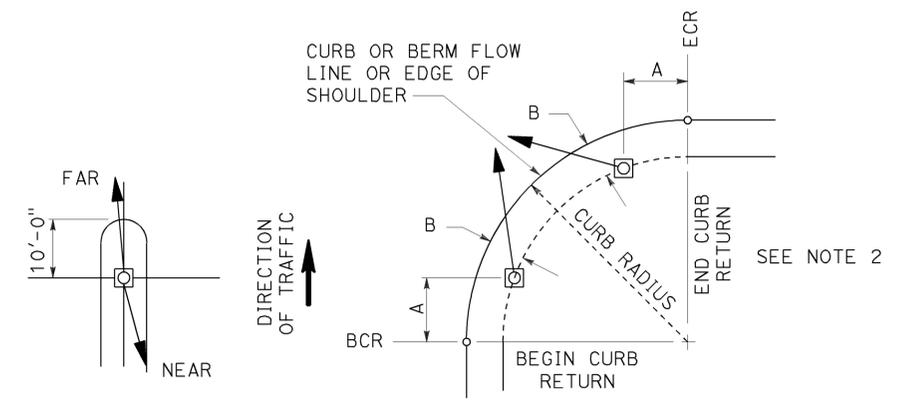
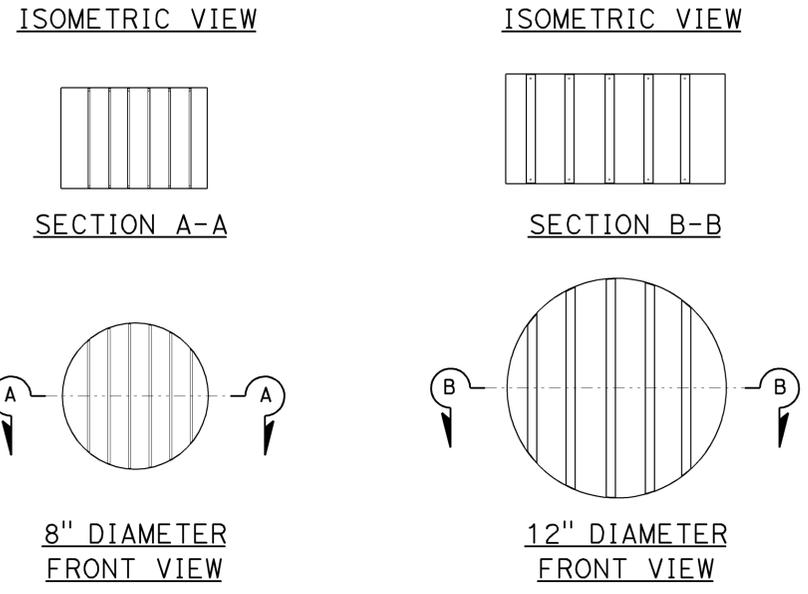
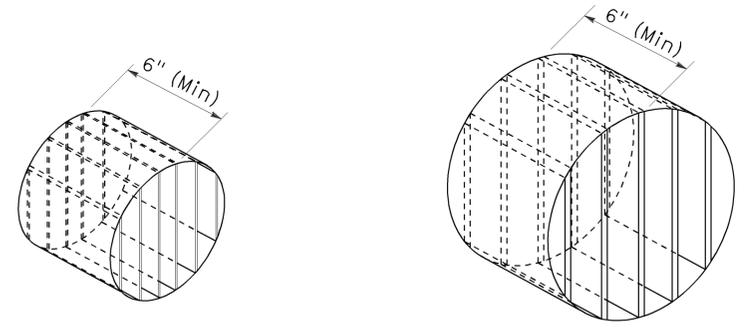
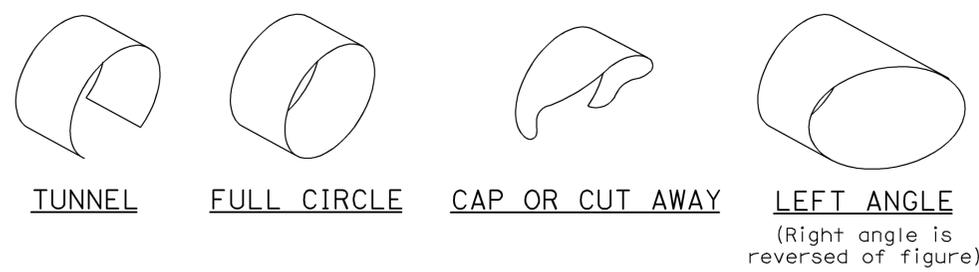
RSP ES-4B DATED OCTOBER 17, 2014 SUPERSEDES RSP ES-4B DATED JULY 19, 2013 AND STANDARD PLAN ES-4B DATED MAY 20, 2011 - PAGE 444 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-4B

2010 REVISED STANDARD PLAN RSP ES-4B

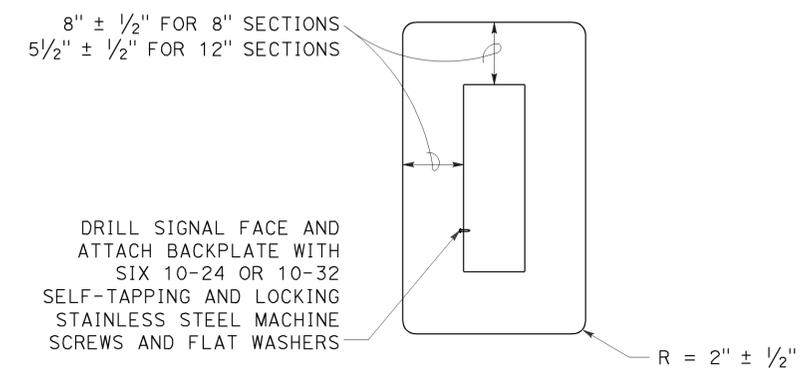
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	727	814
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER No. E15129 Exp. 6-30-14 ELECTRICAL STATE OF CALIFORNIA					
July 19, 2013 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

TO ACCOMPANY PLANS DATED 2-23-15



- NOTES:**
1. Typical signal pole placement unless dimensioned on plans.
 2. For A and B dimensions, see Pole Schedule, or as directed by the Engineer.

VISORS



8" AND 12" SECTIONS

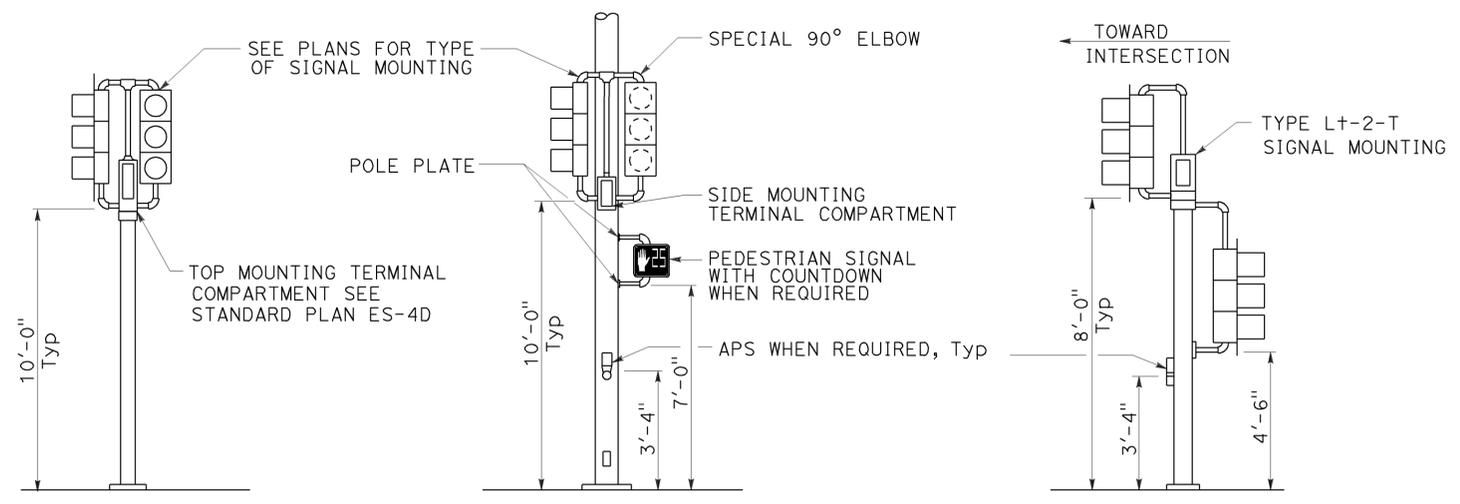
BACKPLATE

1/16" minimum thickness
 3001-14 aluminum or plastic when specified

DIRECTIONAL LOUVER

Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.

SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS



TOP MOUNTED SIGNALS (TV)

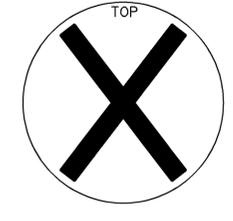
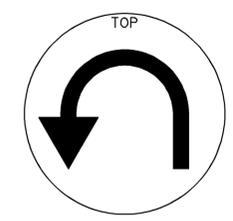
Type 1-A, 1-B, 1-C and 1-D standard as indicated on the plans

SIDE MOUNTED SIGNALS (SV AND SP)

Normally used on standards with luminaire or signal mast arm

LEFT TURN LANE SIGNAL

Type 1-A, 1-B, 1-C and 1-D standard as indicated on plans



SIGNAL FACES

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (VEHICULAR SIGNAL HEADS AND MOUNTINGS)

NO SCALE

RSP ES-4C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-04C DATED MAY 20, 2011 - PAGE 445 OF THE STANDARD PLANS BOOK DATED 2010.

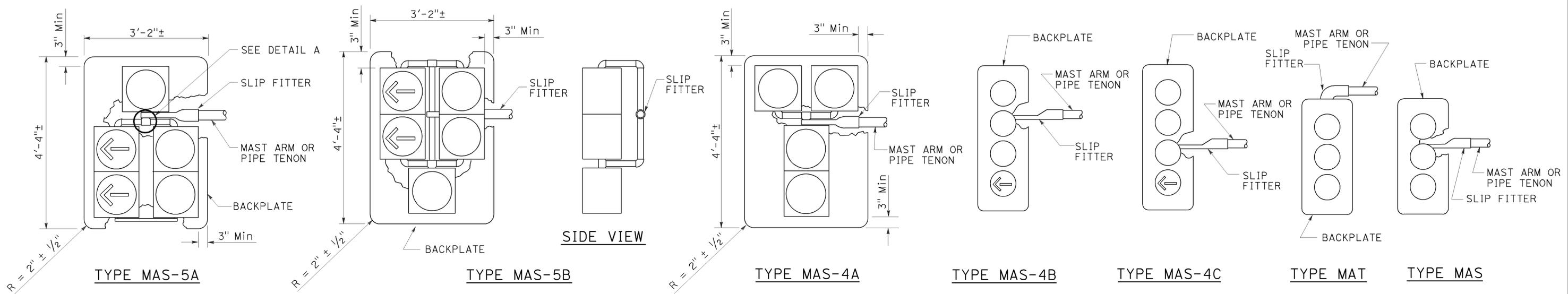
REVISED STANDARD PLAN RSP ES-4C

2010 REVISED STANDARD PLAN RSP ES-4C

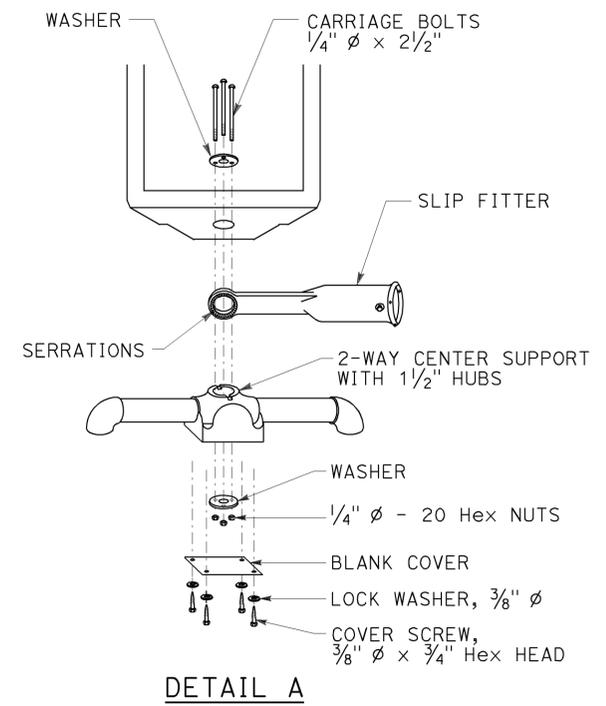
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	728	814
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER July 19, 2013 PLANS APPROVAL DATE					
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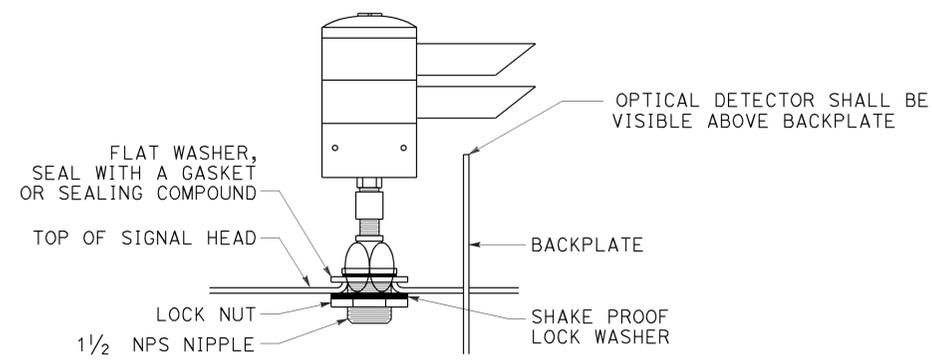
TO ACCOMPANY PLANS DATED 2-23-15



MAST ARM MOUNTINGS



DETAIL A



DETAIL B

**OPTICAL DETECTOR MOUNTING FOR
EMERGENCY VEHICLE DETECTION SYSTEM**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(VEHICULAR SIGNAL HEADS AND
OPTICAL DETECTOR MOUNTING)**

NO SCALE

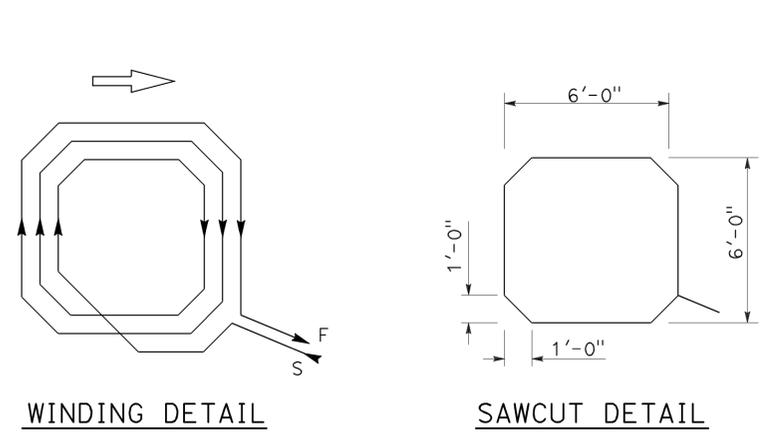
RSP ES-4E DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-4E
DATED MAY 20, 2011 - 447 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-4E

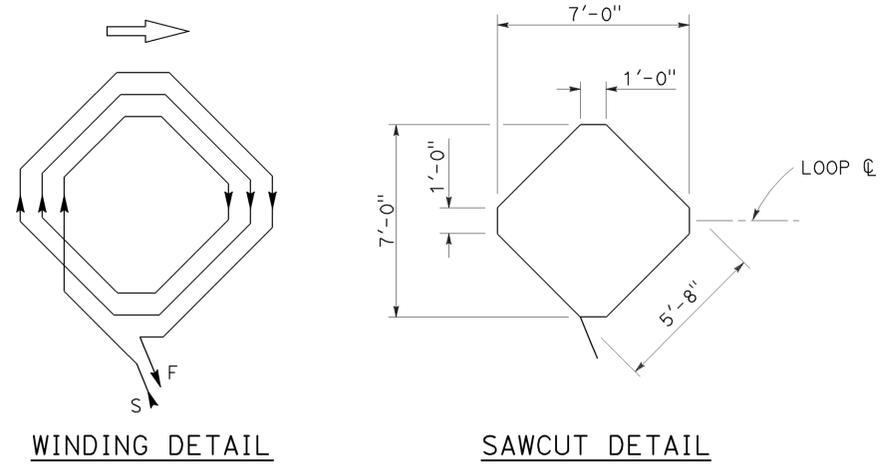
2010 REVISED STANDARD PLAN RSP ES-4E

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	729	814
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER July 19, 2013 PLANS APPROVAL DATE <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
					

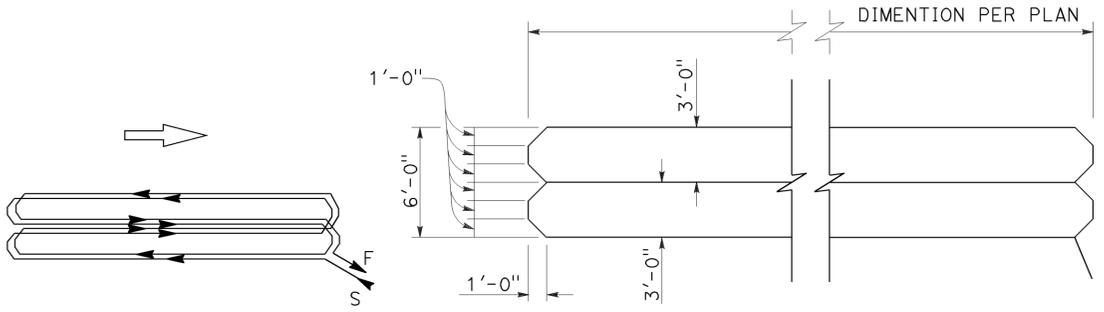
TO ACCOMPANY PLANS DATED 2-23-15



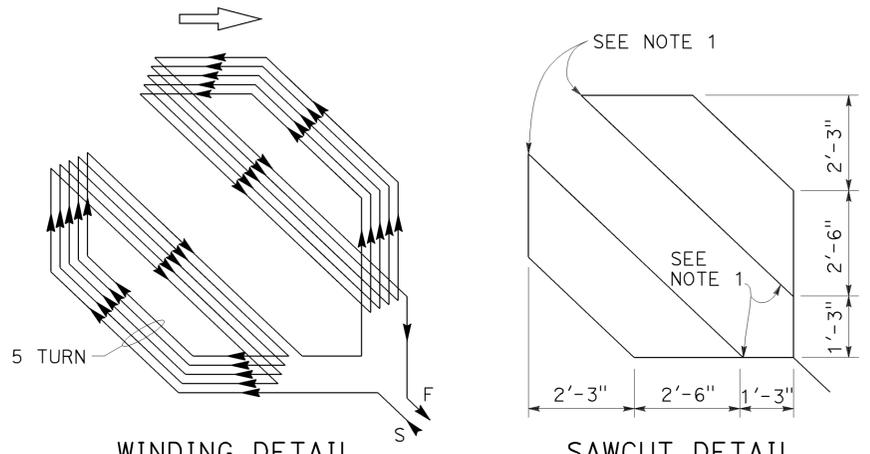
WINDING DETAIL SAWCUT DETAIL
TYPE A LOOP DETECTOR CONFIGURATION



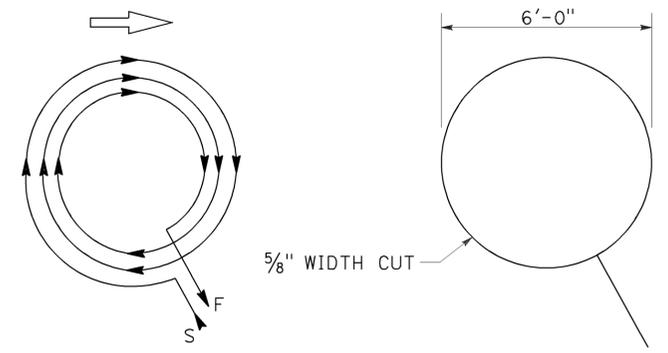
WINDING DETAIL SAWCUT DETAIL
TYPE B LOOP DETECTOR CONFIGURATION



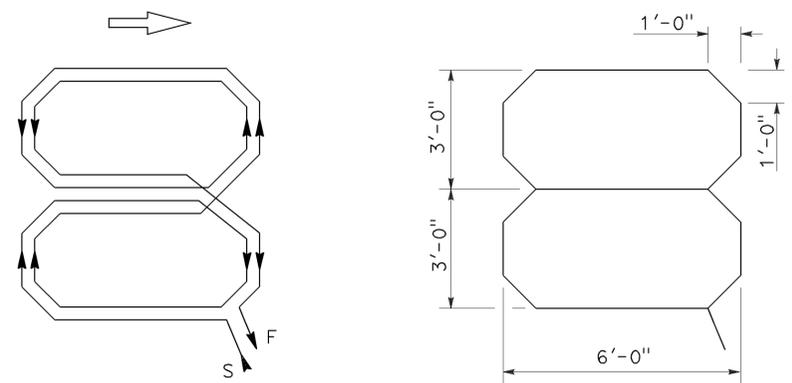
WINDING DETAIL SAWCUT DETAIL
TYPE C LOOP DETECTOR CONFIGURATION



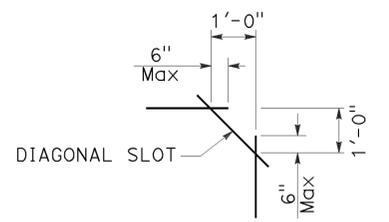
WINDING DETAIL SAWCUT DETAIL
TYPE D LOOP DETECTOR CONFIGURATION



WINDING DETAIL SAWCUT DETAIL
TYPE E LOOP DETECTOR CONFIGURATION



WINDING DETAIL SAWCUT DETAIL
TYPE Q LOOP DETECTOR CONFIGURATION



PLAN VIEW OF
 DIAGONAL SLOT
 AT CORNERS

- NOTES:**
1. Round corners of acute angle sawcuts to prevent damage to conductors.
 2. Typical distance separating loops from edge to edge is 10' for Type A, B, D and E installation in single lane.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
 (DETECTORS)**

NO SCALE

RSP ES-5B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5B
 DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-5B

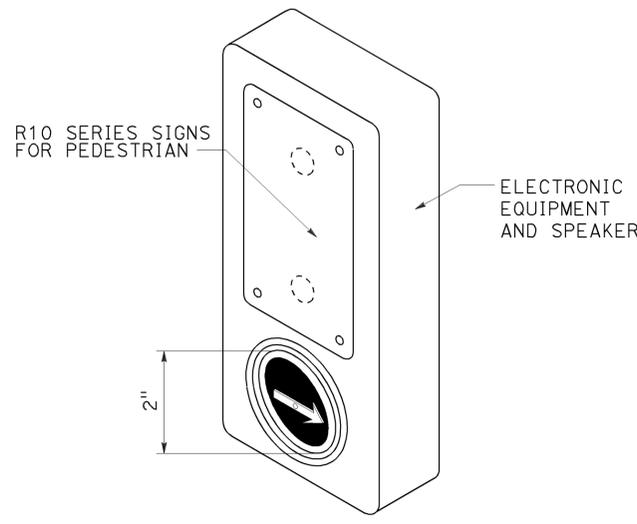
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	730	814
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER July 19, 2013 PLANS APPROVAL DATE					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



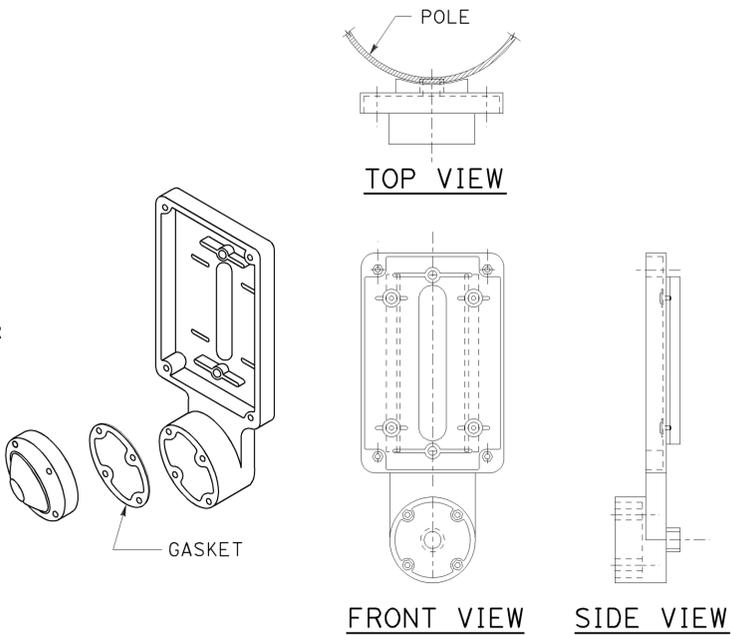
TO ACCOMPANY PLANS DATED 2-23-15

NOTES:

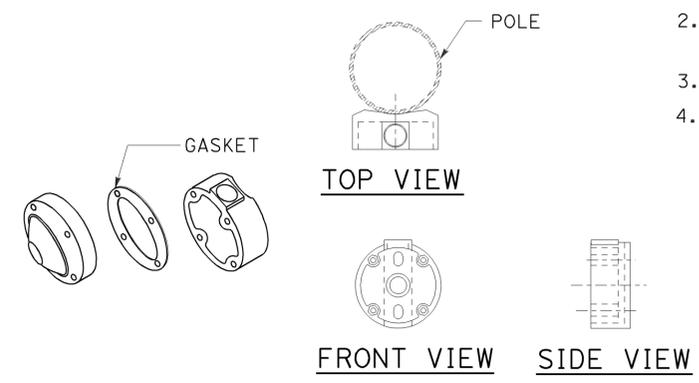
1. Back casting shape to fit curvature of pole.
2. Provide cover fitting for top of post, when PBA is mounted on push button assembly post.
3. Install push button on crosswalk side of standard.
4. Use R10 series regulatory signs and plaques for pedestrian and bicycle facilities.



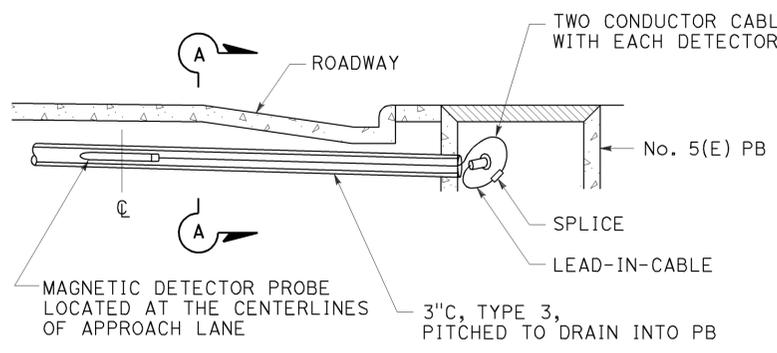
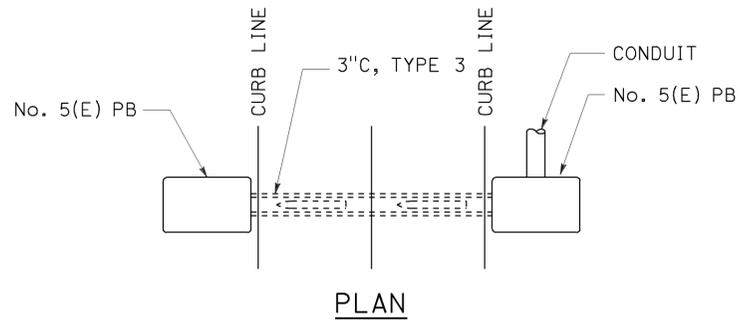
ACCESSIBLE PEDESTRIAN SIGNAL
DETAIL A
 (See note 1 to 4)



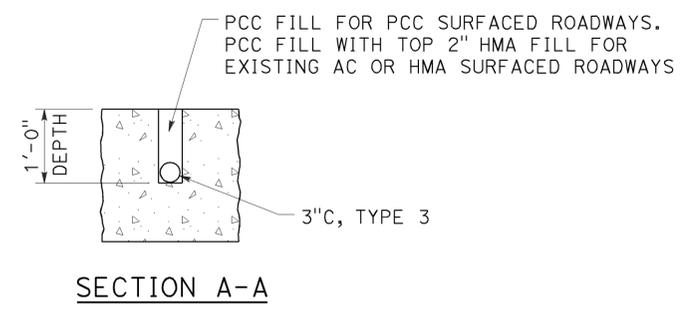
TYPE B PUSH BUTTON ASSEMBLY
DETAIL B
 (See note 1 to 4)



TYPE C PUSH BUTTON ASSEMBLY
DETAIL C
 (See note 1 to 4)



MAGNETIC VEHICLE DETECTOR
INSTALLATION DETAILS
DETAIL D



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(ACCESSIBLE PEDESTRIAN SIGNAL,
PUSH BUTTON ASSEMBLIES AND
MAGNETIC VEHICLE DETECTOR)
 NO SCALE

RSP ES-5C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5C
 DATED MAY 20, 2011 - PAGE 450 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-5C

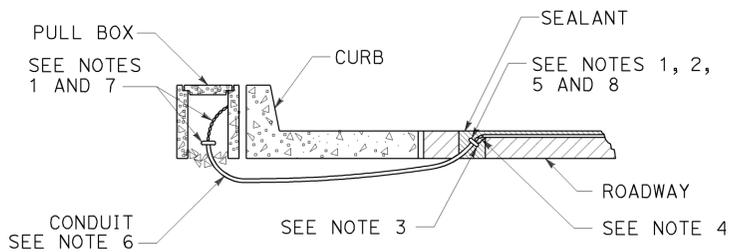
2010 REVISED STANDARD PLAN RSP ES-5C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	731	814

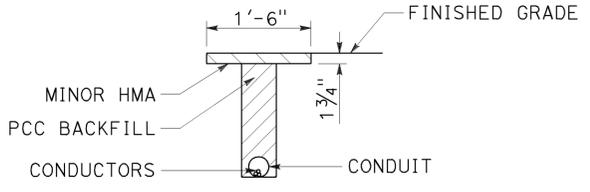
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
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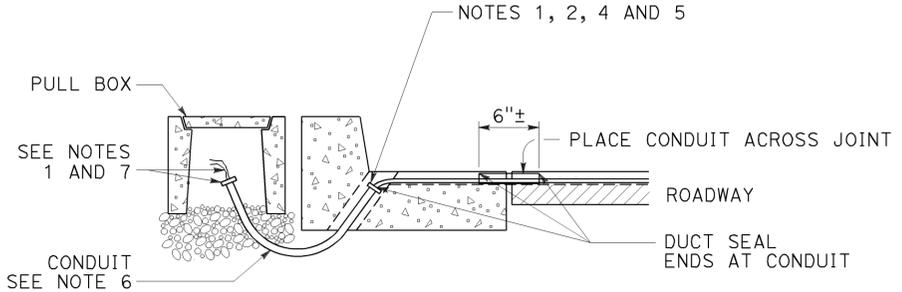
TO ACCOMPANY PLANS DATED 2-23-15



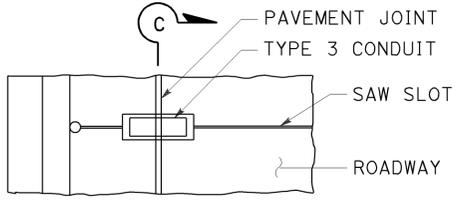
**TYPE A
CURB TERMINATION DETAIL**



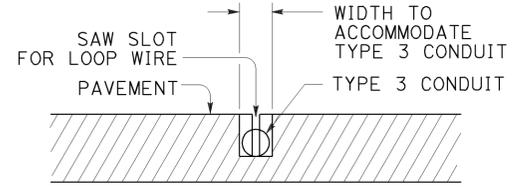
**"T" TRENCH
DETAIL T**



CROSS SECTION

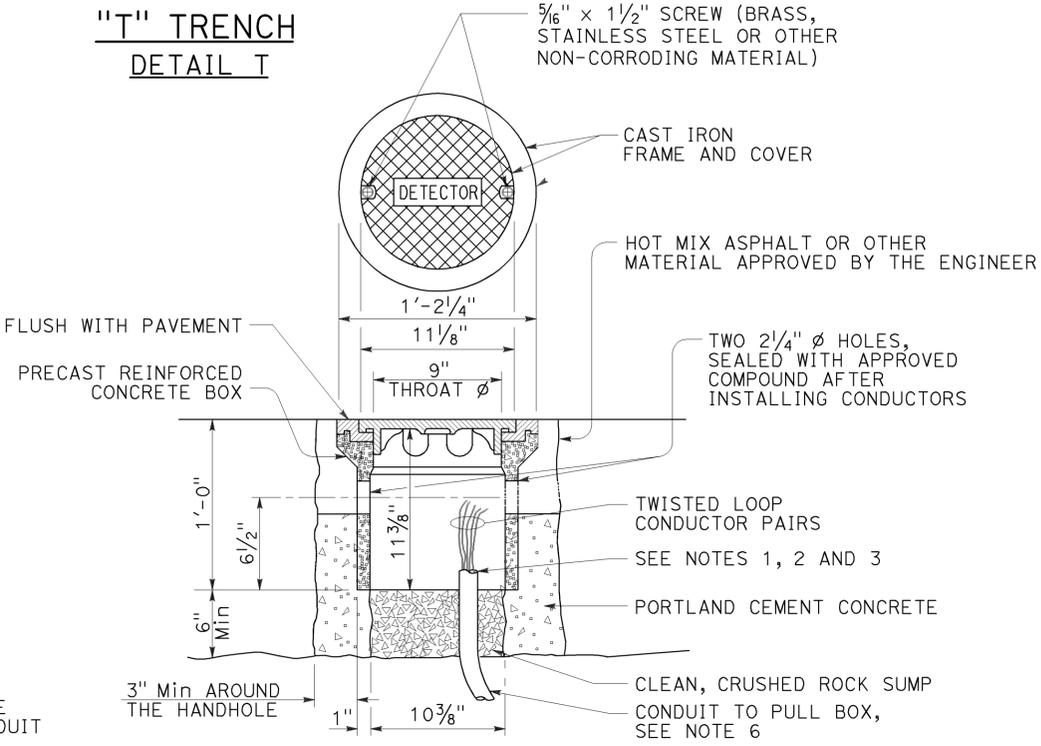


PLAN VIEW

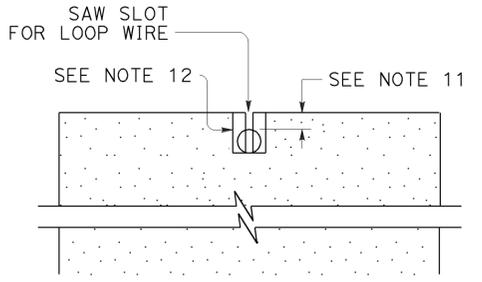


SECTION C-C

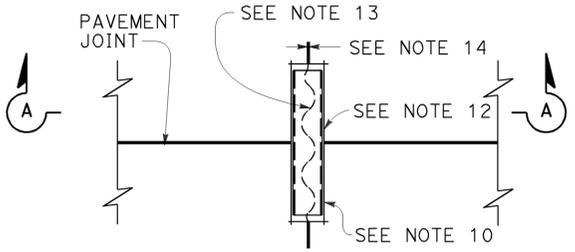
**TYPE B
CURB TERMINATION DETAIL**



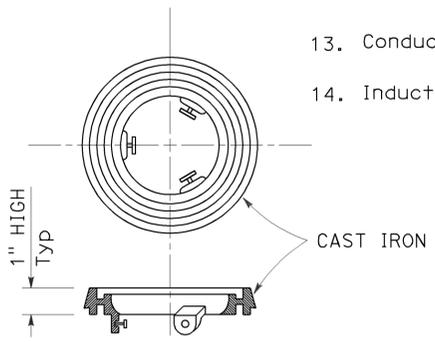
DETECTOR HANDHOLE DETAIL



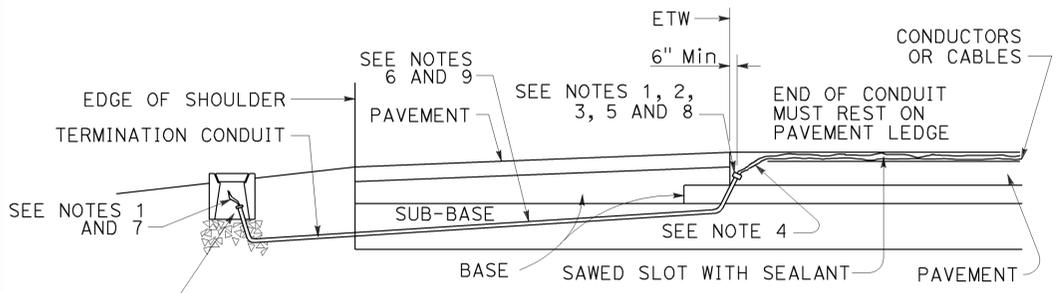
SECTION A-A



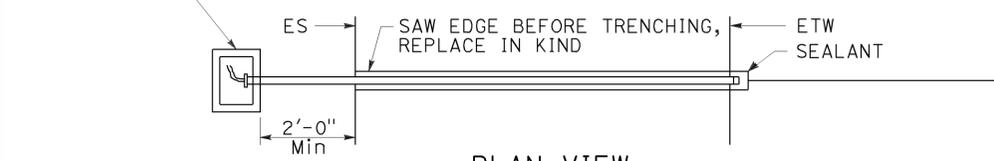
**TYPICAL LOOP LEAD-IN DETAIL
AT PAVEMENT JOINT**



LOCKING GRADE RING



CROSS SECTION



**PLAN VIEW
SHOULDER TERMINATION DETAILS**

NOTES:

- Bushing shall be used at end of conduit.
- Tape detector conductors or cables 3" each side of bushings.
- Install duct seal compound to each end of termination conduit before installing sealant.
- Round all sharp edges where detector conductors or cables have to pass.
- End of conduit shall be 3/8" below roadway surface.
- Conduit size Loop conductors
 1"C minimum 1 to 2 pairs
 1 1/2"C minimum 3 to 4 pairs
 2"C minimum 5 or more pairs
- Splice detector conductors or cables to detector lead-in-cable.
- Location of detector handhole when shown on plans.
- When the shoulder and traveled way are paved with the same material and there is no joint between them, the conduit shall extend only 2'-0" into the shoulder pavement.
- 3/4"C, Type 3 conduit 6" long minimum, plug both ends with duct compound to keep out sealant.
- 1/2" Minimum between top of conduit and pavement surface.
- Sawcut shall not exceed 1" in width and 1/8" longer than conduit to be installed.
- Conductors with 1/2" minimum slack inside conduit.
- Inductive loop detector saw slot.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(CURB TERMINATION
AND HANDHOLE)**
NO SCALE

RSP ES-5D DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5D
DATED MAY 20, 2011 - PAGE 451 OF THE STANDARD PLANS BOOK DATED 2010.

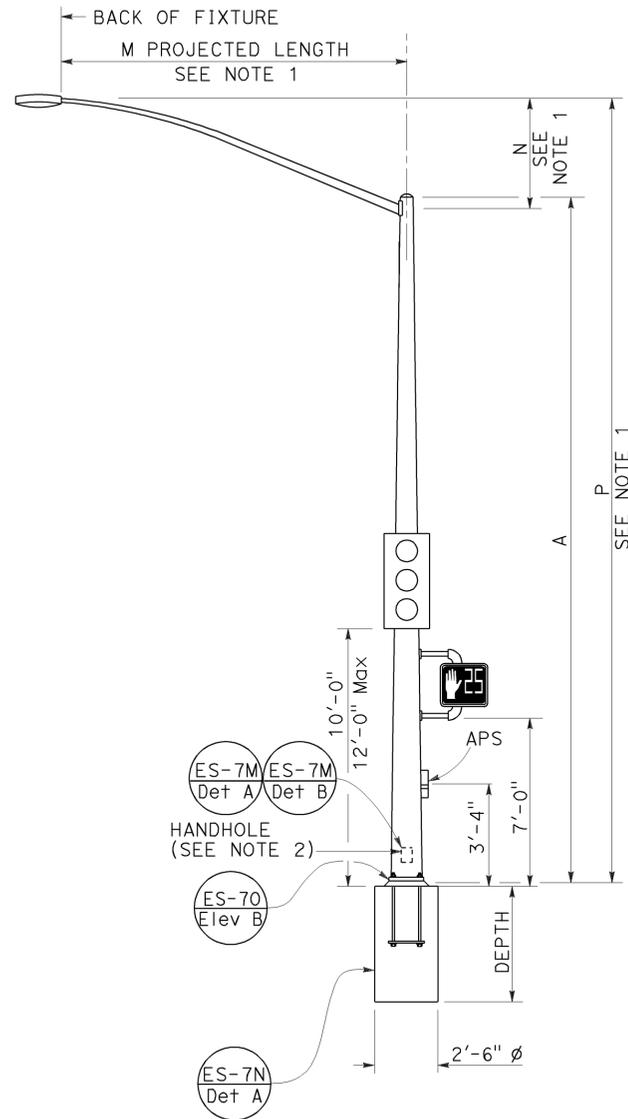
REVISED STANDARD PLAN RSP ES-5D

2010 REVISED STANDARD PLAN RSP ES-5D

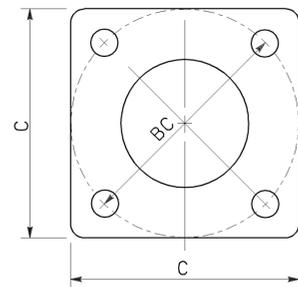
NOTES:

- For additional notes, details and data for Type 15TS and Type 21TS Standards, see Standard Plan ES-6A.
- Handhole shall be located on the downstream side of traffic.

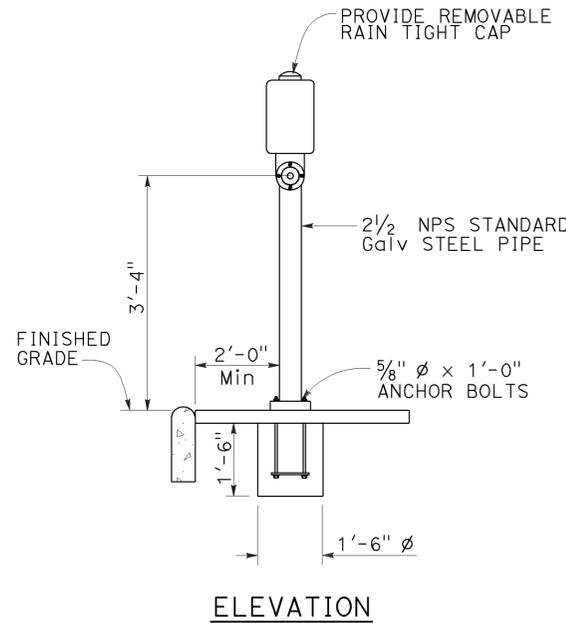
TO ACCOMPANY PLANS DATED 2-23-15



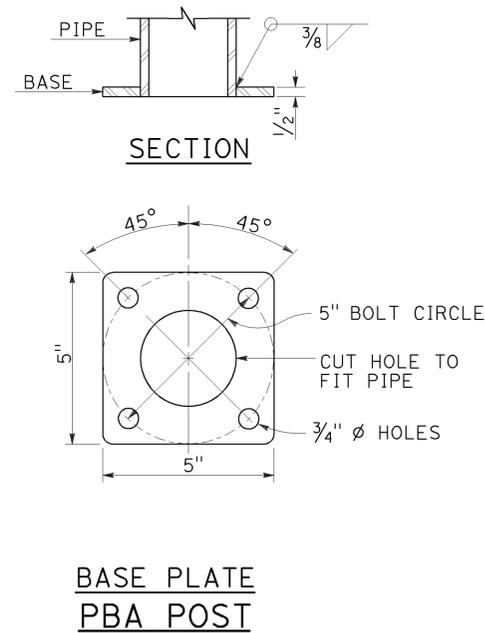
TYPE 15TS AND 21TS STANDARD
ELEVATION A
(See Note 1)



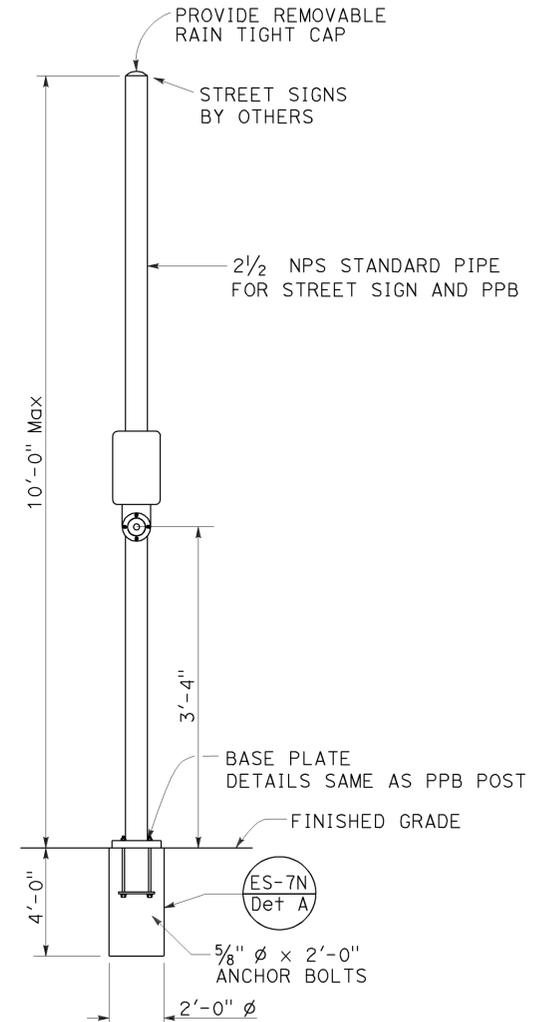
BASE PLATE
TYPE 15TS AND 21TS
DETAIL A



PUSH BUTTON ASSEMBLY POST
DETAIL B



COMBINED STREET SIGN
PUSH BUTTON ASSEMBLY POST
DETAIL C



POLE TYPE	POLE DATA			WALL THICKNESS	BASE PLATE DATA			CIDH DEPTH
	A HEIGHT	Min OD			C	BC = BOLT CIRCLE	ANCHOR BOLT SIZE	
		BASE	TOP					
15TS	30'-0"	8"	3 1/16"	0.1793"	1'-1 1/2"	1'-0"	1 1/2" ø x 42"	7'-6"
21TS	35'-0"	9 3/8"	3 3/16"		1'-3"	1'-2"		8'-6"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD, TYPE TS,
AND PUSH BUTTON ASSEMBLY POST)

NO SCALE

RSP ES-7A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-7A
DATED MAY 20, 2011 - PAGE 462 OF THE STANDARD PLANS BOOK DATED 2010.

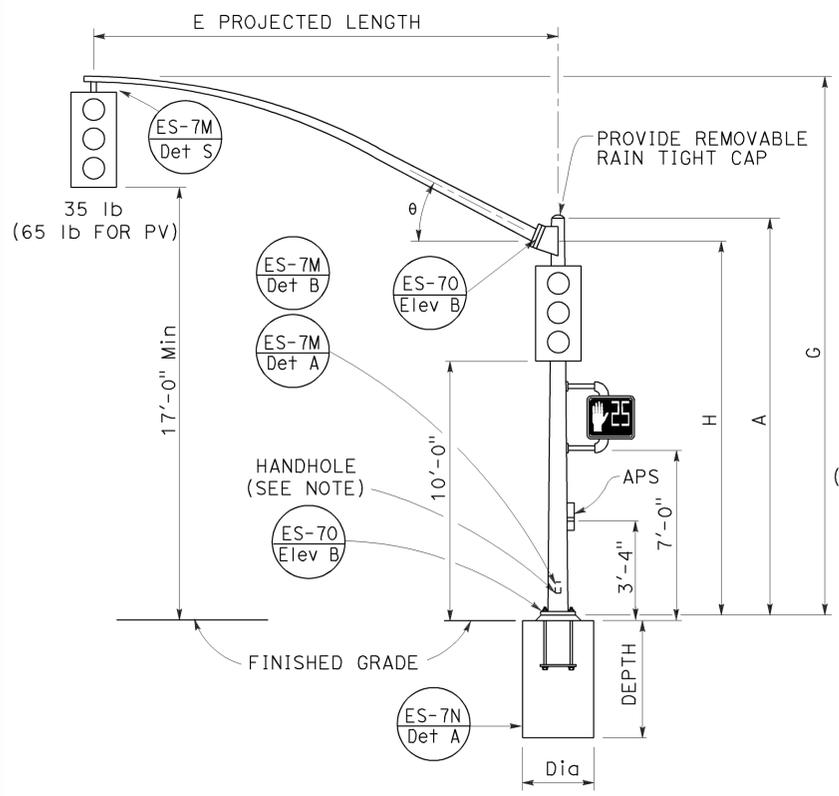
REVISED STANDARD PLAN RSP ES-7A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	733	814

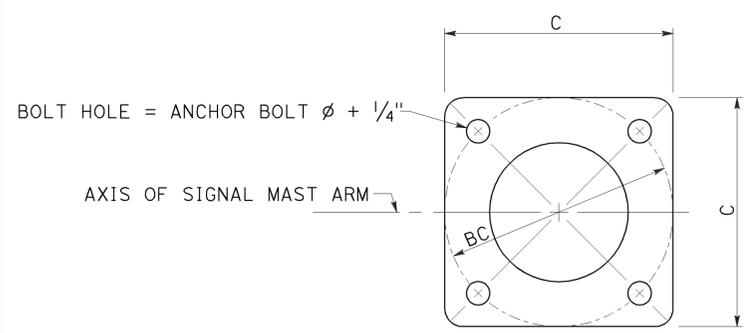
Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 No. C57793
 Exp. 3-31-14
 CIVIL
 STATE OF CALIFORNIA

July 19, 2013
 PLANS APPROVAL DATE

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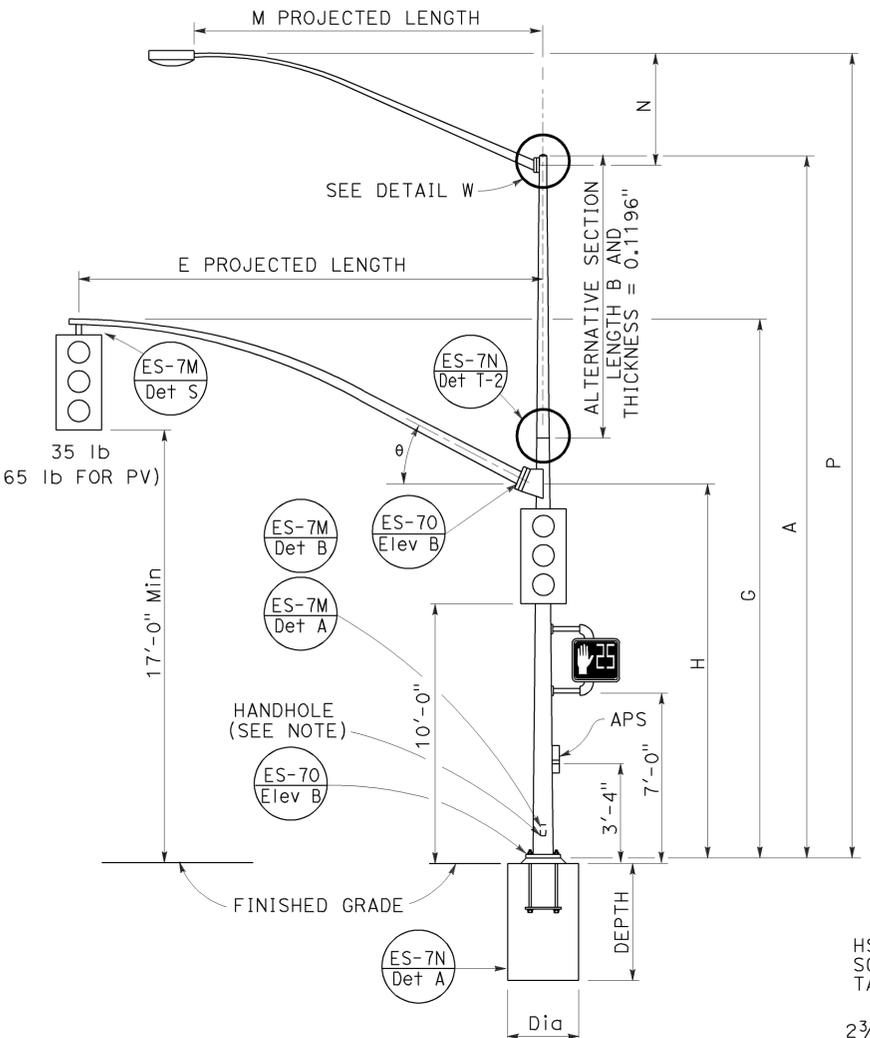


TYPE 16-1-100, 18-1-100
ELEVATION A

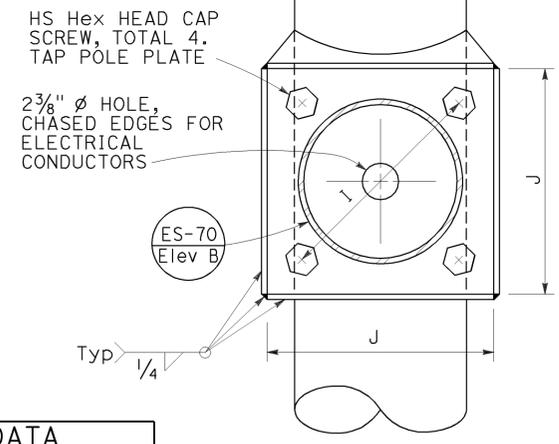


BASE PLATE
DETAIL D

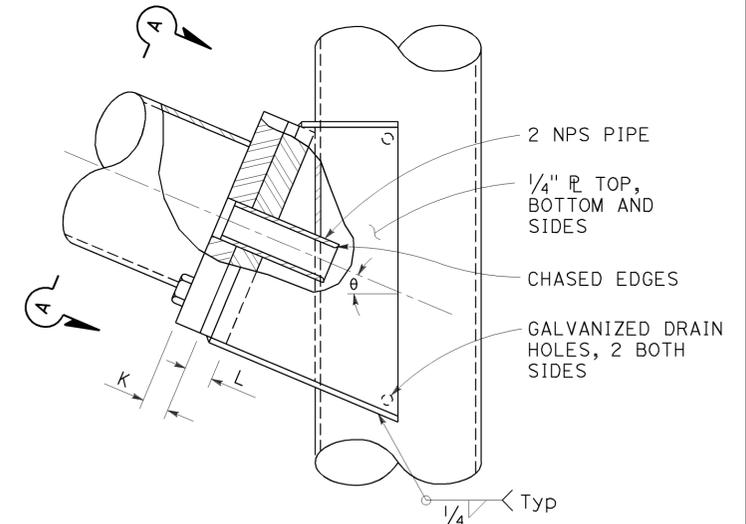
E PROJECTED LENGTH	G MOUNTING HEIGHT	H	Min OD AT POLE	THICKNESS	I BOLT CIRCLE	HS CAP SCREWS	J PLATE SIZE	K MAST ARM P THICKNESS	L POLE P THICKNESS	θ
15'-0"	21'-8"±	17'-6"	7 3/8"	0.1196"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°
20'-0"	22'-8"±	16'-0"								
25'-0"	23'-0"±									



TYPE 19-1-100, 19A-1-100
ELEVATION B



VIEW A-A



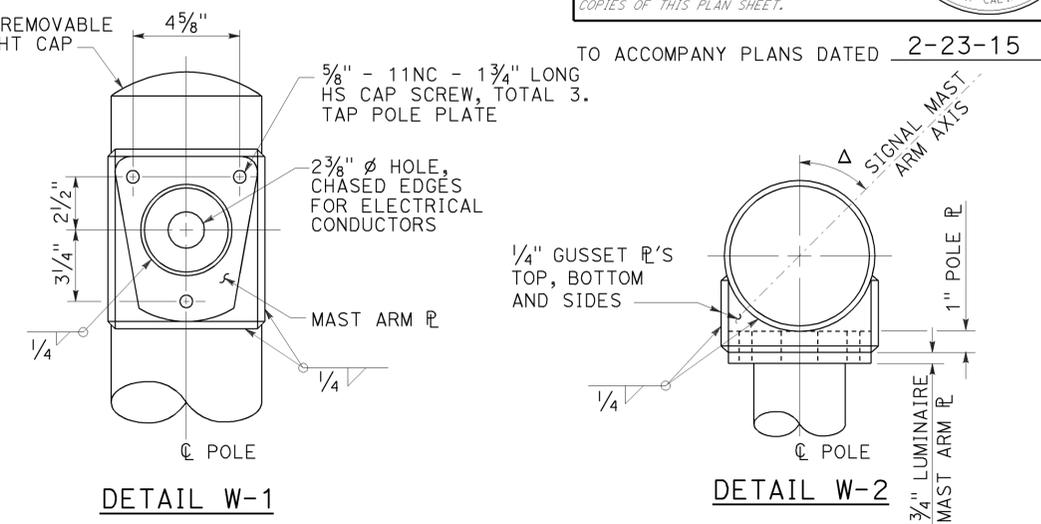
ELEVATION C

M PROJECTED LENGTH	N RISE	Min OD AT POLE	THICKNESS	P MOUNTING HEIGHT
6'-0"	2'-0"±	3 1/4"	0.1196"	30'-0" POLE
8'-0"	2'-6"±	3 1/2"		35'-0" POLE
10'-0"	3'-3"±	3 3/8"		32'-9"±
12'-0"	4'-3"±			37'-9"±
15'-0"	4'-9"±	4 1/4"		33'-9"±
				38'-9"±
				34'-3"±
				39'-3"±

SIGNAL MAST ARM CONNECTION
DETAIL C

Δ = LUMINAIRE MAST ARM SKEW -90° TO +90°
 DEFAULT 0°

NOTE:
 Handhole shall be located on the downstream side of traffic.



DETAIL W-1

DETAIL W-2

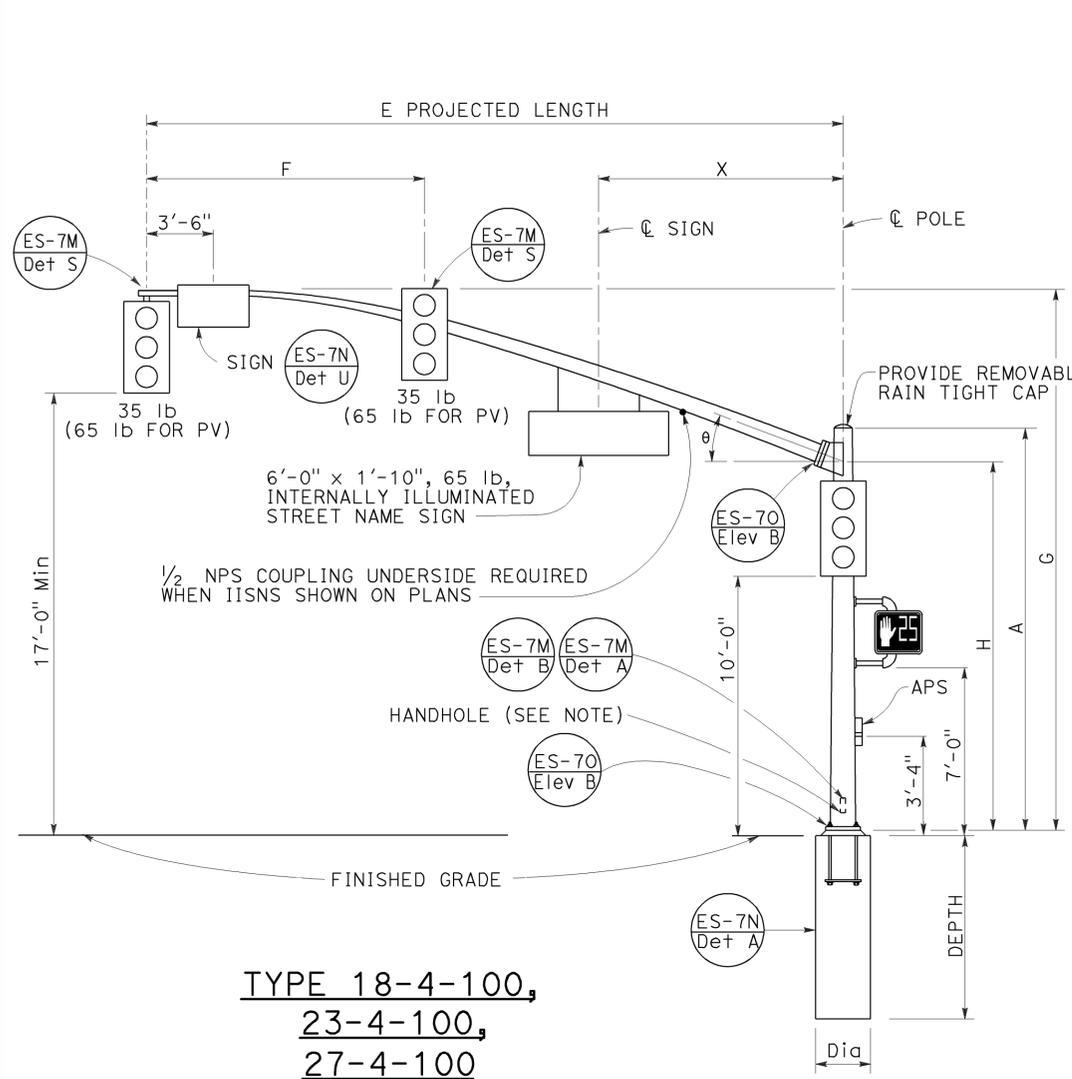
LUMINAIRE MAST ARM CONNECTION
DETAIL W

ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD, CASE 1 SIGNAL MAST ARM LOADING, WIND VELOCITY = 100 MPH AND SIGNAL MAST ARM LENGTHS 15' TO 30')
 NO SCALE

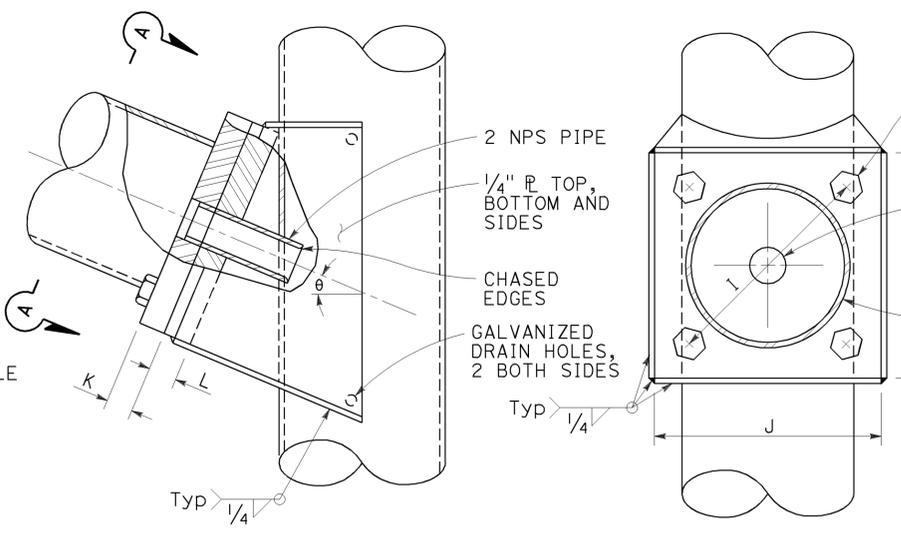
RSP ES-7C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-7C DATED MAY 20, 2011 - PAGE 464 OF THE STANDARD PLANS BOOK DATED 2010.

POLE TYPE	LOAD CASE	WIND VELOCITY (mph)	POLE DATA				BASE PLATE DATA				CIDH PILE FOUNDATION							
			A HEIGHT	Min OD		THICKNESS	ALTERNATIVE SECTION			C	BC = BOLT CIRCLE	THICKNESS	ANCHOR BOLT SIZE	LUMINAIRE MAST ARM	SIGNAL MAST ARM	DIAMETER	DEPTH	REINFORCED
				BASE	TOP		B	BOTTOM	TOP									
16-1-100	1	100	18'-6"	8 1/16"	0.1793"	None			1'-5 1/2"	1'-5 1/2"	3"	1 1/2" ϕ x 42"	NONE	15'-0", [20'-0"]	2'-6"	9'-0"	YES	
18-1-100			17'-0"	8 5/16"		None							NONE					
19-1-100			30'-0"	6 7/16"		10'-0"	7 7/8"	6 7/16"					6'-15' [12'-0"]	25'-0", [30'-0"]				
19A-1-100			35'-0"	5 11/16"		15'-0"	5 11/16"	6'-15' [15'-0"]										

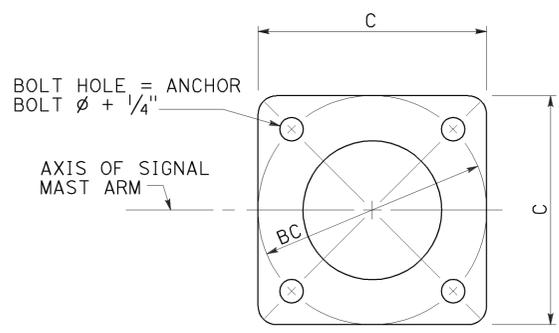
[] INDICATES MAST ARM LENGTH TO BE USED UNLESS OTHERWISE NOTED ON PLANS.



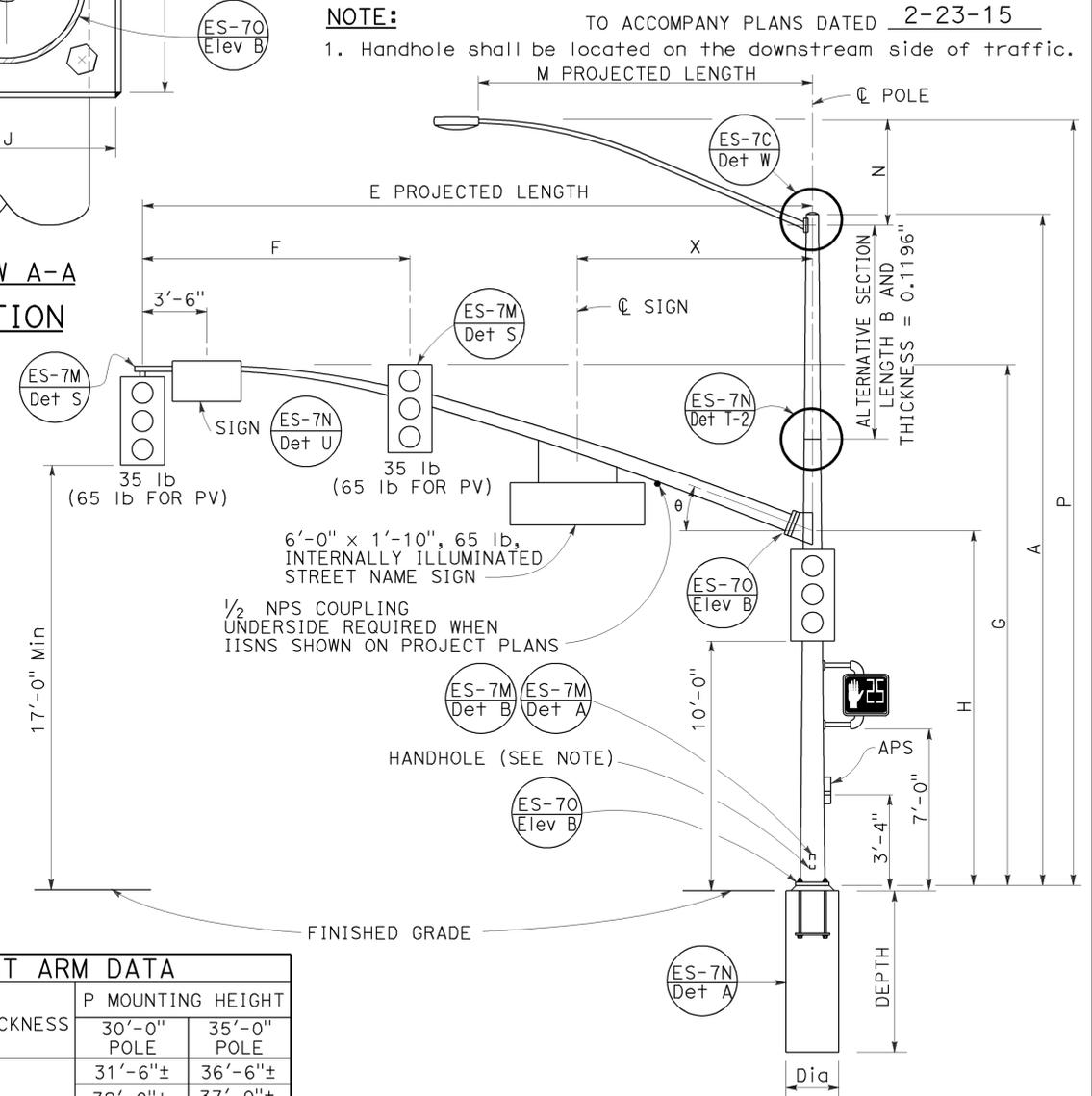
**TYPE 18-4-100,
 23-4-100,
 27-4-100
 ELEVATION A**



**ELEVATION C
 SIGNAL MAST ARM CONNECTION
 DETAIL A**



**BASE PLATE
 DETAIL B**



**TYPE 19-4-100, 19A-4-100,
 24-4-100, 24A-4-100,
 26-4-100, 26A-4-100
 ELEVATION B**

E PROJECTED LENGTH	F Min SPACING	G MOUNTING HEIGHT	H	Min OD AT POLE	THICKNESS	I BOLT CIRCLE	HS CAP SCREWS	J PLATE SIZE	K MAST ARM THICKNESS	L POLE R THICKNESS	theta	X Max
25'-0"	10'-0"	22'-8"±	16'-0"	7 3/8"	0.2391"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"
30'-0"	12'-0"	8"										
35'-0"	14'-0"	8 1/16"										
40'-0"	15'-0"	9 3/8"										
45'-0"		23'-8"±		10 1/4"		13 1/2"		1'-1 1/2"	1 1/2"	1 3/4"	15°	13'-0"

M PROJECTED LENGTH	N RISE	Min OD AT POLE	THICKNESS	P MOUNTING HEIGHT	
				30'-0" POLE	35'-0" POLE
6'-0"	2'-0"±	3 1/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±			33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±

POLE TYPE	LOAD CASE	WIND VELOCITY (mph)	POLE DATA			BASE PLATE DATA				LUMINAIRE MAST ARM			SIGNAL MAST ARM			CIDH PILE FOUNDATION		
			A HEIGHT	Min OD		THICKNESS	ALTERNATIVE SECTION			C	BC = BOLT CIRCLE	THICKNESS	ANCHOR BOLT SIZE	LUMINAIRE MAST ARM	SIGNAL MAST ARM	Dia	DEPTH	REINFORCED
				BASE	TOP		B LENGTH	BOTTOM	TOP									
18-4-100	4	100	17'-0"	12 1/8"	9 1/16"	NONE	1'-7"	1'-5 1/2"	3"	2" phi x 42"	NONE	25'-0", 30'-0"	3'-0"	11'-0"	YES			
19-4-100			30'-0"		7 1/16"	10'-0"										9 1/8"	7 1/16"	
19A-4-100			35'-0"		6 15/16"	15'-0"										6 5/16"		
23-4-100			17'-0"		9 9/16"	NONE												
24-4-100			30'-0"	7 1/16"	10'-0"	9 1/8"	7 1/16"											
24A-4-100			35'-0"	6 15/16"	15'-0"	6 5/16"												
26-4-100			30'-0"	8 3/16"	10'-0"	9 5/8"	8 3/16"											
26A-4-100			35'-0"	7 7/16"	15'-0"	7 7/16"												
27-4-100			17'-0"	10 1/16"	NONE													

[] INDICATES MAST ARM LENGTH TO BE USED UNLESS OTHERWISE NOTED ON PLANS.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (SIGNAL AND LIGHTING STANDARD,
 CASE 4 SIGNAL MAST ARM LOADING,
 WIND VELOCITY=100 MPH AND SIGNAL
 MAST ARM LENGTHS 25' TO 45')**
 NO SCALE
 RSP ES-7F DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-7F
 DATED MAY 20, 2011 - PAGE 467 OF THE STANDARD PLANS BOOK DATED 2010.
REVISED STANDARD PLAN RSP ES-7F

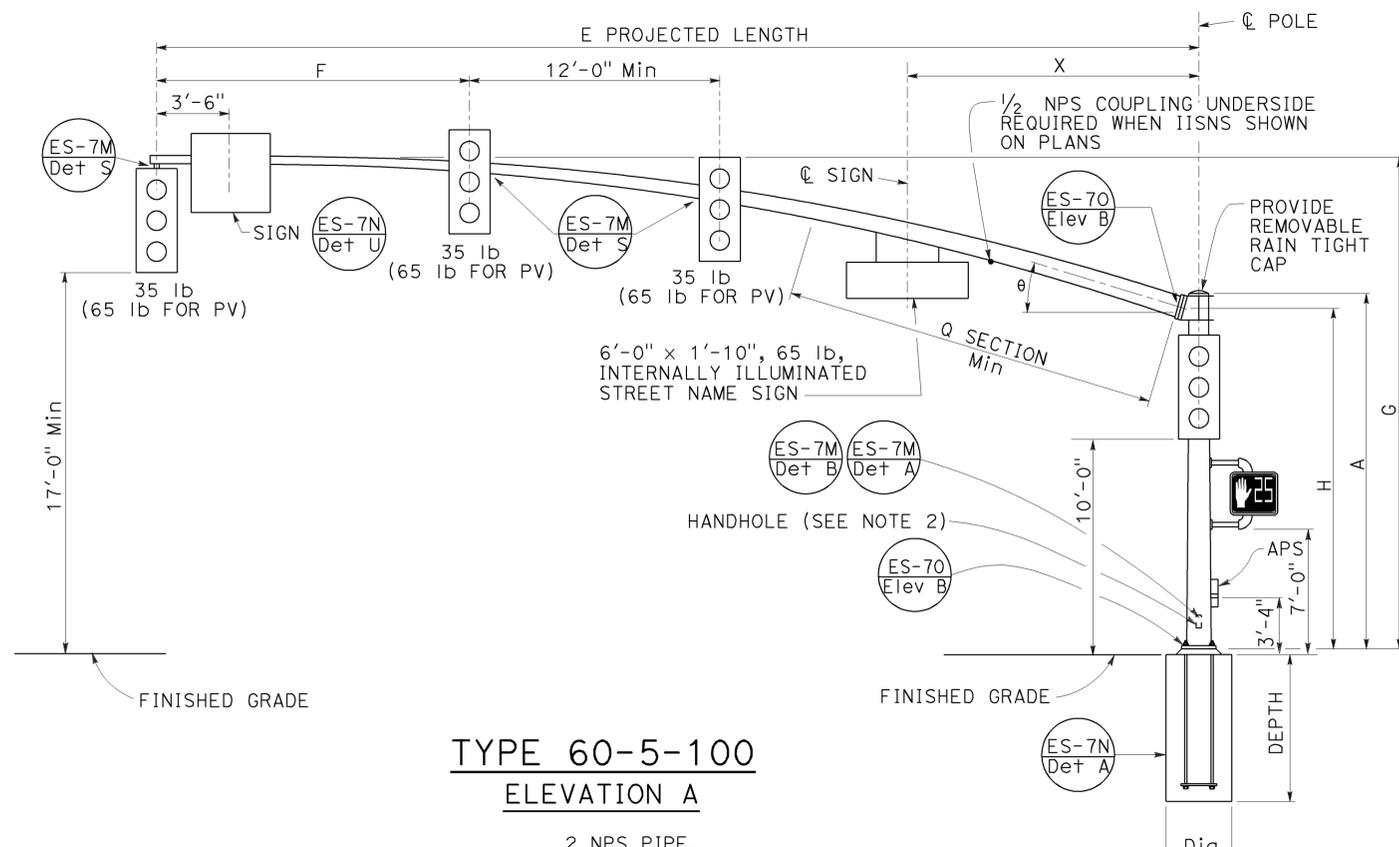
2010 REVISED STANDARD PLAN RSP ES-7F

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	736	814

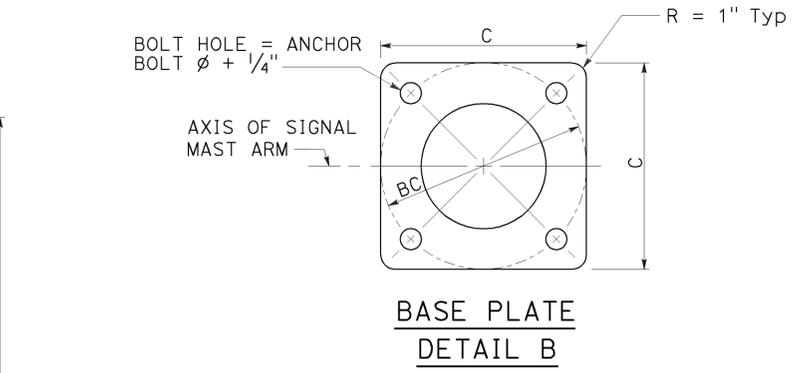
Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 No. C57793
 Exp. 3-31-14
 CIVIL
 STATE OF CALIFORNIA

July 19, 2013
 PLANS APPROVAL DATE

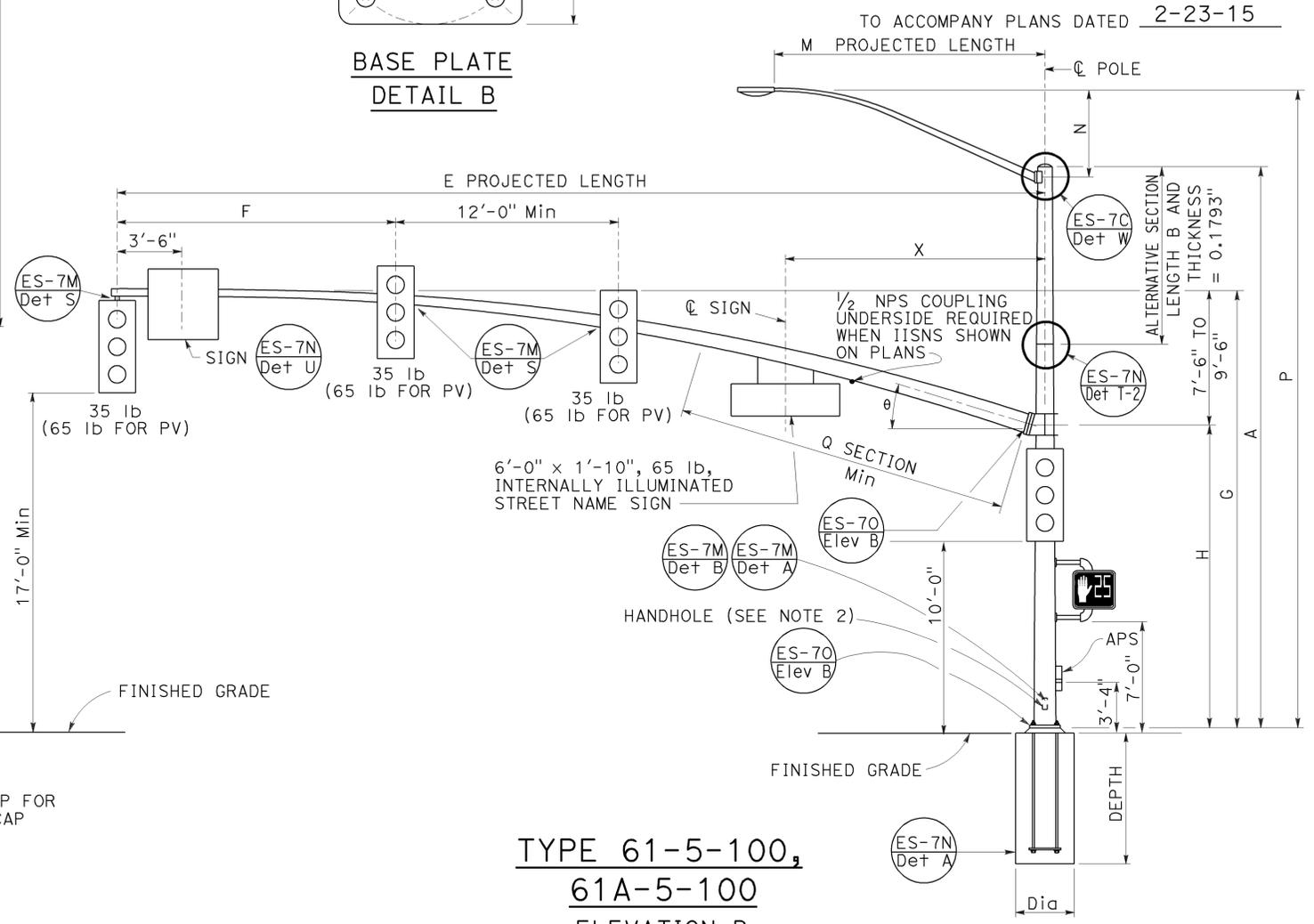
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



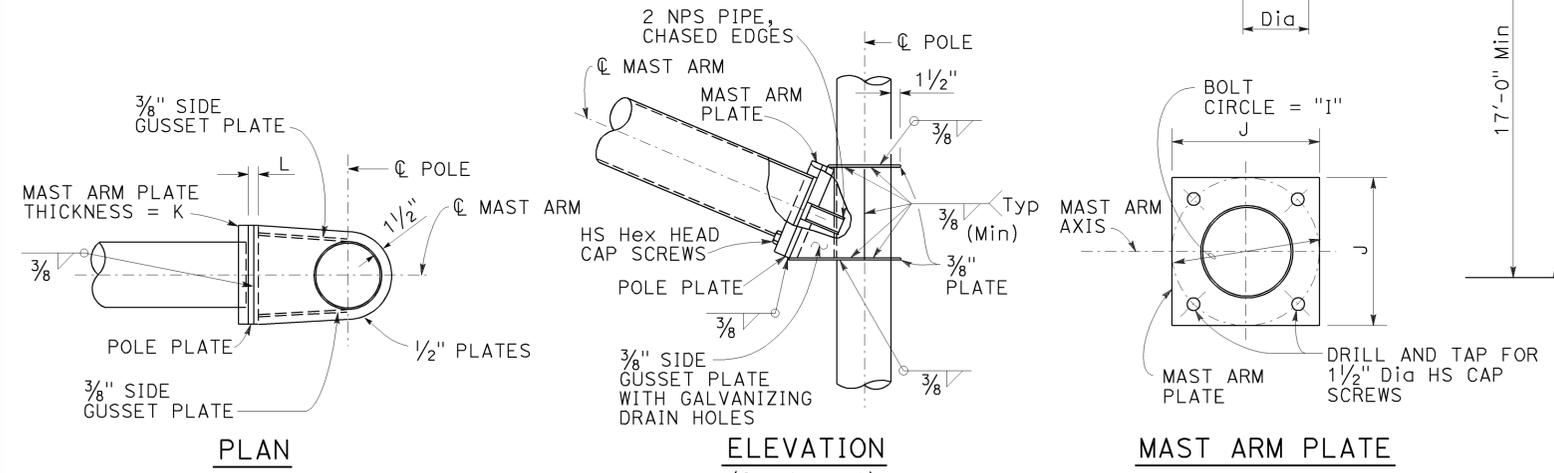
TYPE 60-5-100
ELEVATION A



BASE PLATE
DETAIL B



TYPE 61-5-100,
61A-5-100
ELEVATION B



SIGNAL MAST ARM CONNECTION
DETAIL A

E PROJECTED LENGTH	F Min SPACING	G MOUNTING HEIGHT	H	Min OD AT POLE	THICKNESS	I BOLT CIRCLE	HS CAP SCREWS	J PLATE SIZE	K MAST ARM PLATE THICKNESS	L POLE PLATE THICKNESS	θ	Q SECTION		X Max
												LENGTH	THICKNESS	
60'-0"	15'-0"	23'-7" TO 25'-7"	16'-0"	1'-1 1/2"	0.1793"	20"	1 1/2"-6NC-4"	1'-8"	2"	2"	15°	24'-0"	0.2391"	14'-0"
65'-0"					0.2391"							29'-0"	0.3125"	

M PROJECTED LENGTH	N RISE	Min OD AT POLE	THICKNESS	P MOUNTING HEIGHT POLE	Q MOUNTING HEIGHT POLE
6'-0"	2'-0"±	3 1/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 3/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±	3 7/8"		33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±

- NOTES:**
- The radial separation between the face of the pole and the adjacent insides of the top and bottom gusset plates shall not exceed 3/16". Fillet weld size to be increased by amount of gap.
 - Handhole shall be located on the downstream side of traffic.

POLE TYPE	LOAD CASE	WIND VELOCITY (mph)	POLE DATA			BASE PLATE DATA				LUMINAIRE MAST ARM	SIGNAL MAST ARM	CIDH PILE FOUNDATION			
			A HEIGHT	Min OD		C	BC = BOLT CIRCLE	THICKNESS	ANCHOR BOLT SIZE			DIAMETER	DEPTH	REINFORCED	
				BASE	TOP										
60-5-100	5	100	17'-0"	16"	1'-1 9/16"	0.3125"	2'-0"	1'-11"	3"	2 1/2" ø x 60"	NONE	60'-0", 65'-0"	3'-6"	13'-0"	YES
61-5-100			30'-0"		11 1/16"										
61A-5-100			35'-0"		10 5/16"										

□ INDICATES MAST ARM LENGTH TO BE USED UNLESS OTHERWISE NOTED ON PLANS.

REVISED STANDARD PLAN RSP ES-7H

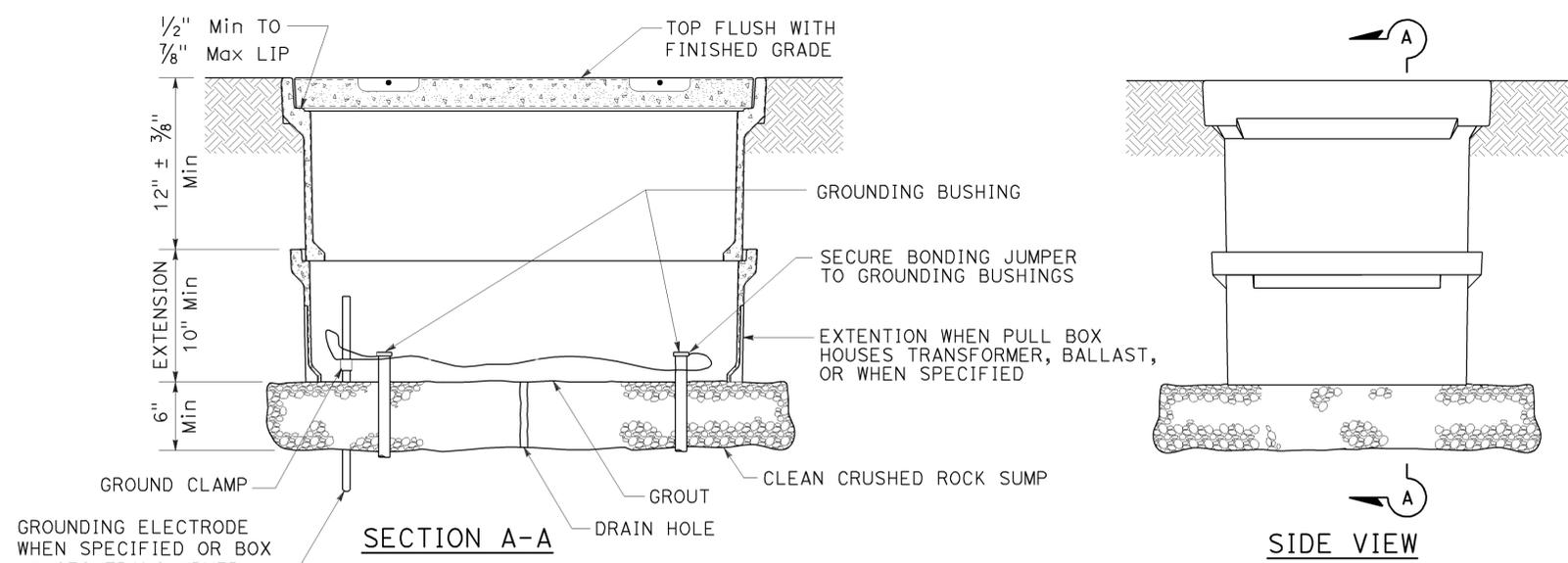
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD,
CASE 5 SIGNAL MAST ARM LOADING,
WIND VELOCITY=100 MPH AND SIGNAL
MAST ARM LENGTHS 60' TO 65')
 NO SCALE

RSP ES-7H DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-7H
 DATED MAY 20, 2011 - PAGE 469 OF THE STANDARD PLANS BOOK DATED 2010.

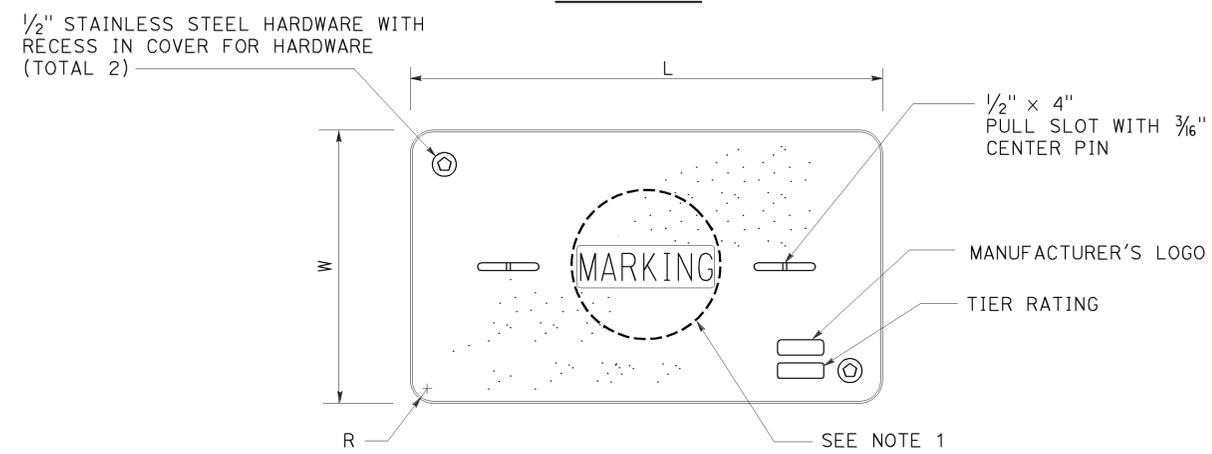
2010 REVISED STANDARD PLAN RSP ES-7H

TO ACCOMPANY PLANS DATED 2-23-15

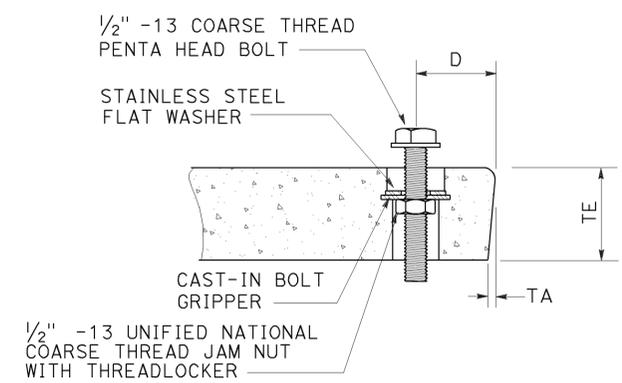
2010 REVISED STANDARD PLAN RSP ES-8A



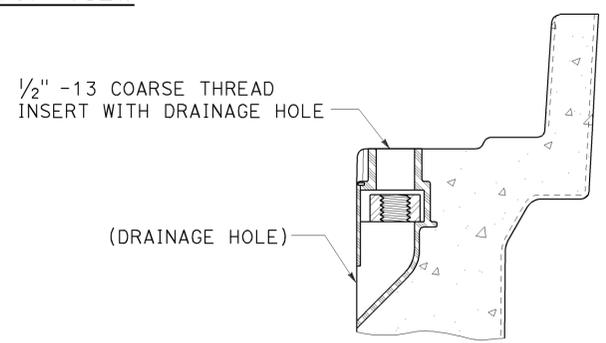
INSTALLATION DETAILS
DETAIL A



COVER TOP VIEW



TYPICAL COVER CAPTIVE BOLT
OR SIMILAR



TYPICAL THREADED INSERT
OR SIMILAR

NOTES:

- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" sprinkler control circuits, 50 V or less; "CALTRANS" on all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service;
 - No. 3 1/2 pull box.
 - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - No. 5, 6, 9 or 9A pull box.
 - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
 - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
 - "RAMP METER" - Ramp meter circuits.
 - "COUNT STATION" - Count or speed monitor circuits.
 - "COMMUNICATIONS" - Communication circuits.
 - "TOS COMMUNICATIONS" - TOS communication line.
 - "TOS POWER" - TOS power.
 - "TDC POWER" - Telephone demarcation cabinet power.
 - "CCTV" - Closed circuit television circuits.
 - "TMS" - Traffic monitoring station circuits.
 - "CMS" - Changeable message sign circuits.
 - "HAR" - Highway advisory radio circuits.
 - "BOOSTER PUMP" - Booster pump circuit.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8". Top outside radius of covers and pull boxes shall have a 1/8" radius.
- Pull box extension may be another pull box as long as the bottom edge of the pull box can fit into the cover opening.
- All dimensions for the cover for non-traffic pull box are nominal values.

DIMENSION TABLE										
PULL BOX	PULL BOX			COVER						
	MINIMUM DEPTH BOX	MINIMUM DEPTH EXTENSION	MAXIMUM WEIGHT	L	W	R	TE	TA	D	MAXIMUM WEIGHT
No. 3 1/2	12"	N/A	40 lb	1' - 3 3/8"	10 1/8"	1 3/8"	2"	1/8"	1 3/4"	30 lb
No. 5	12"	10"	55 lb	1' - 11 1/4"	1' - 1 3/4"	1 3/8"	2"	1/8"	1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 6 1/2"	1' - 5 1/2"	1 3/8"	2"	1/8"	2"	85 lb

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(NON-TRAFFIC PULL BOX)
NO SCALE

RSP ES-8A DATED JULY 19, 2013 SUPERSEDES RSP ES-8A DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

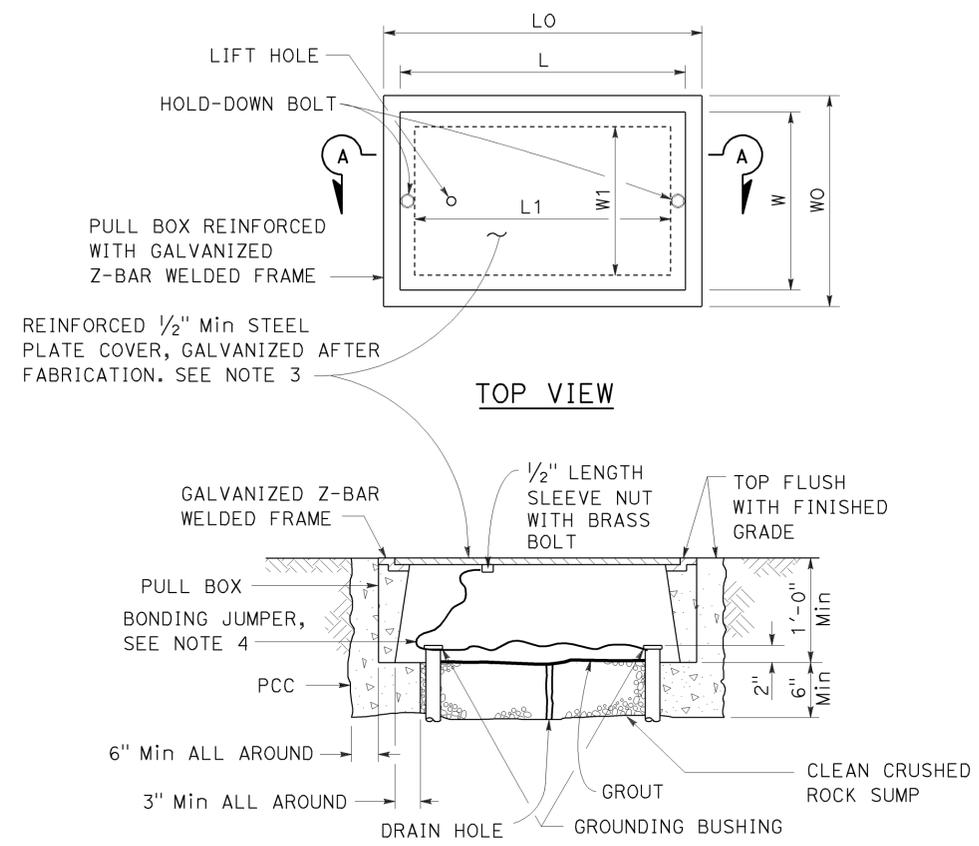
REVISED STANDARD PLAN RSP ES-8A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	84	22.9/25.7	738	814

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 2-23-15



SECTION A-A
No. 3 1/2(T), No. 5(T) AND
No. 6(T) TRAFFIC PULL BOX

NOTES:

- Traffic pull box shall be provided with steel cover and special concrete footing. Steel cover shall have embossed non-skid pattern.
- Steel reinforcing shall be as regularly used in the standard products of the respective manufacturer.
- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" Sprinkler control circuits, 50 V or less; "CALTRANS" On all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service.
 - No. 3 1/2(T) pull box.
 - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - No. 5(T) or 6(T) pull box.
 - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
 - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
 - "RAMP METER" - Ramp meter circuits.
 - "COUNT STATION" - Count or speed monitor circuits.
 - "COMMUNICATION" - Communication circuits.
 - "TOS COMMUNICATIONS" - TOS communications line.
 - "TOS POWER" - TOS power.
 - "TDC POWER" - Telephone demarcation cabinet power.
 - "CCTV" - Closed circuit television circuits.
 - "TMS" - Traffic monitoring station circuits.
 - "CMS" - Changeable message sign circuits.
 - "HAR" - Highway advisory radio circuits.
 - "BOOSTER PUMP" - Booster pump circuit.
- Bonding jumper for metal covers shall be 3' long, minimum.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8".

PULL BOX	PULL BOX						COVER				
	MINIMUM * THICKNESS	MINIMUM DEPTH BOX AND EXTENSION	W0	L0	L1	W1	L **	W **	R	EDGE THICKNESS	EDGE TAPER
No. 3 1/2(T)	1 1/2"	1'-0"	1'-5"± 1"	1'-8 3/8"±	1'-2 1/2"±	10 5/8"± 1"	1'-8"±	1'-1 3/4"±	0"	1/2"	NONE
No. 5(T)	1 3/4"	1'-0"	1'-11 1/2"± 1"	2'-5 1/2"±	1'-7"±	1'-1"± 1"	2'-3"±	1'-4"±	0"	1/2"	NONE
No. 6(T)	2"	1'-0"	2'-6"± 1"	2'-11 1/2"±	1'-11 1/2"±	1'-5"± 1"	2'-9"±	1'-8"±	0"	1/2"	NONE

* EXCLUDING CONDUIT WEB ** TOP DIMENSION

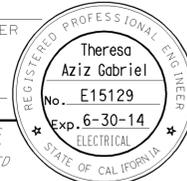
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(TRAFFIC PULL BOX)
 NO SCALE

RSP ES-8B DATED JULY 19, 2013 SUPERSEDES RSP ES-8B DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

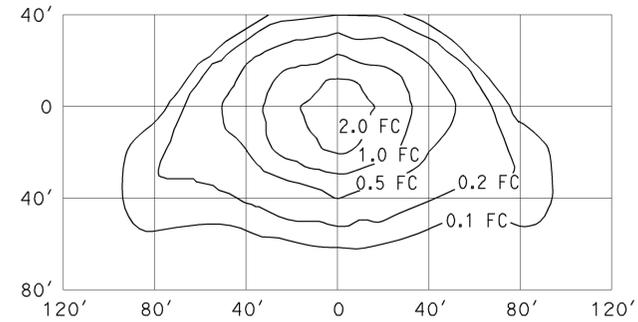
REVISED STANDARD PLAN RSP ES-8B

2010 REVISED STANDARD PLAN RSP ES-8B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	739	814
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER					
July 19, 2013 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
TO ACCOMPANY PLANS DATED <u>2-23-15</u>					

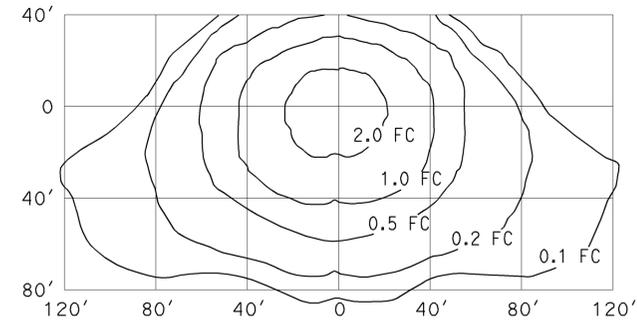


ISOFOOTCANDLE CURVE - MINIMUM



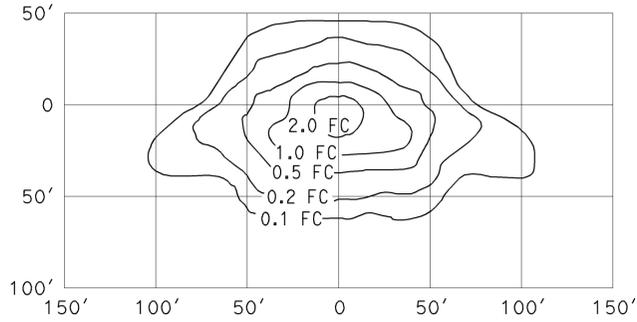
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 34' Mounting Height
 Lamp operated at 22,000 lm
 200-W high pressure sodium lamp
 ANSI Designation S66

ISOFOOTCANDLE CURVE - MINIMUM



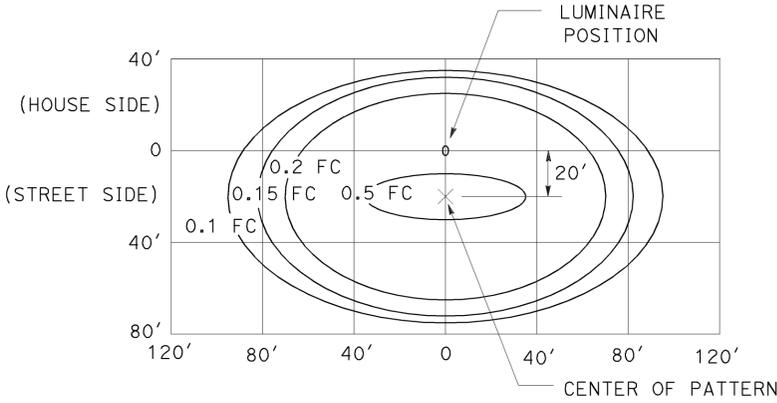
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 40' Mounting Height
 Lamp operated at 37,000 lm
 310-W high pressure sodium lamp
 ANSI Designation S67

ISOFOOTCANDLE CURVE - MINIMUM



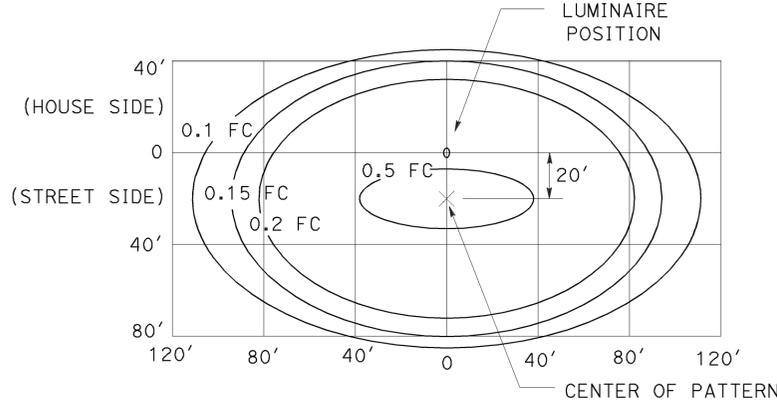
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 30' Mounting Height
 Lamp operated at 16,000 lm
 150-W high pressure sodium lamp
 ANSI Designation S55

ISOFOOTCANDLE CURVE - MINIMUM



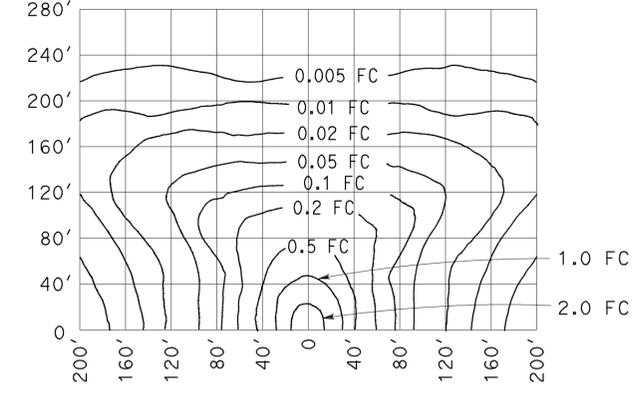
LED LUMINAIRE ROADWAY 1
 165-W at 34' Mounting Height

ISOFOOTCANDLE CURVE - MINIMUM



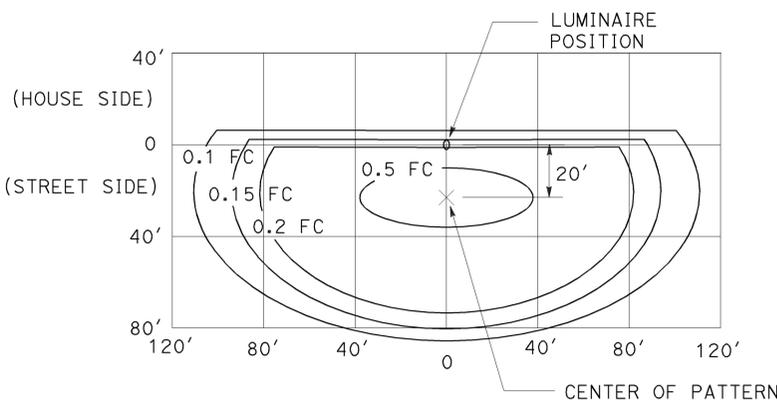
LED LUMINAIRE ROADWAY 2
 235-W at 40' Mounting Height

ISOFOOTCANDLE CURVE - MINIMUM



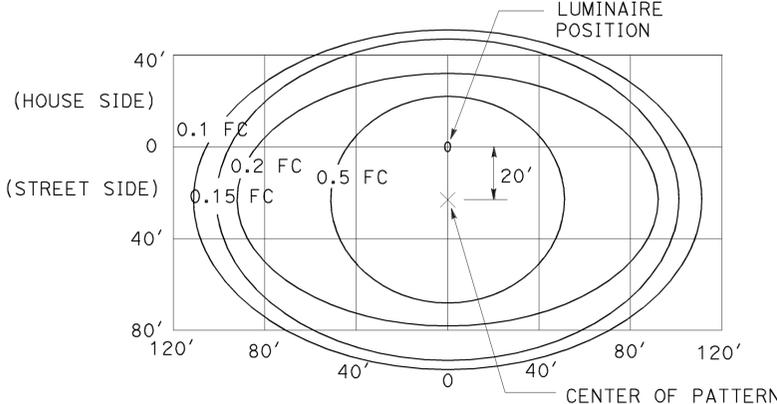
LOW PRESSURE SODIUM LUMINAIRE
 40' Mounting Height
 Lamp operated at 33,000 lm
 180-W low pressure sodium lamp

ISOFOOTCANDLE CURVE - MINIMUM



LED LUMINAIRE ROADWAY 3
 235-W at 40' Mounting Height
 with back side control

ISOFOOTCANDLE CURVE - MINIMUM



LED LUMINAIRE ROADWAY 4
 300-W at 40' Mounting Height

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

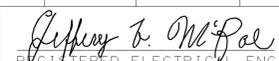
**ELECTRICAL SYSTEMS
 (ISOFOOTCANDLE DIAGRAMS)**

NO SCALE

RSP ES-10A DATED JULY 19, 2013 SUPERSEDES RSP ES-10A DATED JULY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

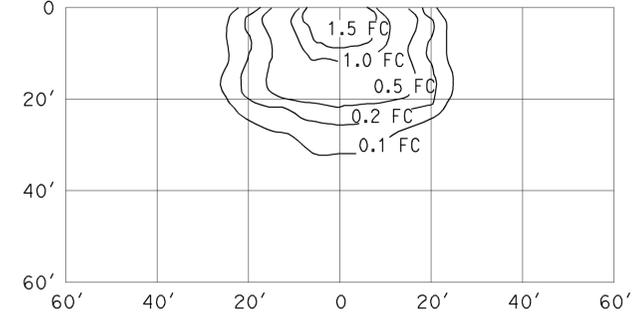
REVISED STANDARD PLAN RSP ES-10A

2010 REVISED STANDARD PLAN RSP ES-10A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	740	814
 REGISTERED ELECTRICAL ENGINEER					
July 20, 2012 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

TO ACCOMPANY PLANS DATED 2-23-15

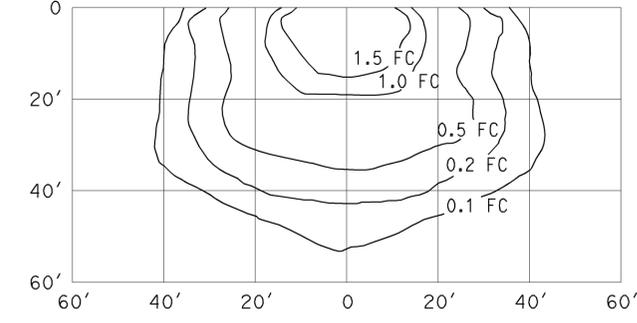
ISOFOOTCANDLE CURVE - MINIMUM



WALL LUMINAIRE

15' Mounting Height
 Lamp operated at 5,800 lm
 70-W high pressure sodium lamp
 ANSI Designation S62

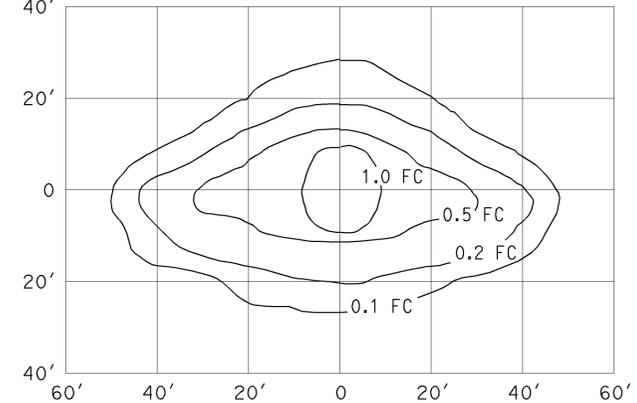
ISOFOOTCANDLE CURVE - MINIMUM



WALL LUMINAIRE

15' Mounting Height
 Lamp operated at 9,500 lm
 100-W high pressure sodium lamp
 ANSI Designation S54

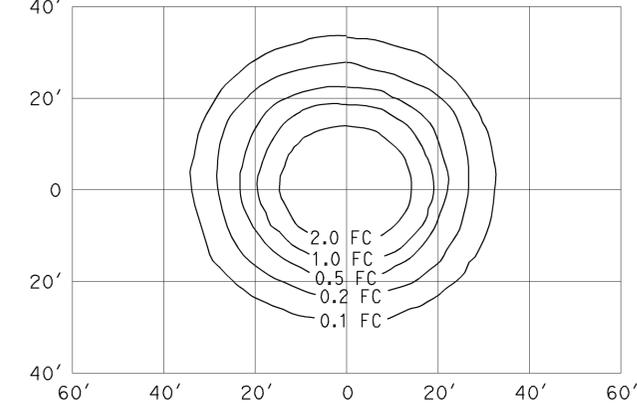
ISOFOOTCANDLE CURVE - MINIMUM



**PENDANT SOFFIT LUMINAIRE
 TYPE III SHORT**

17' Mounting Height
 Lamp operated at 5,800 lm
 70-W high pressure sodium lamp
 ANSI Designation S62

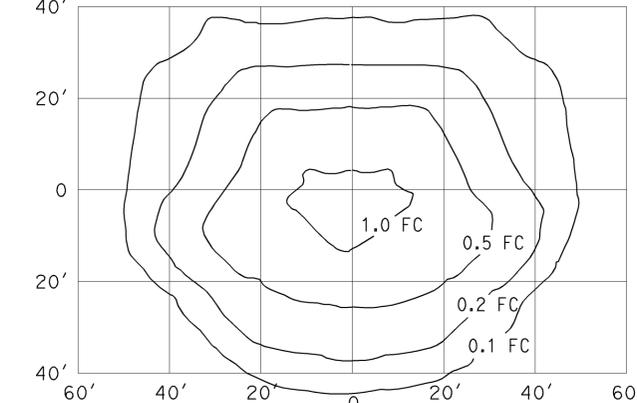
ISOFOOTCANDLE CURVE - MINIMUM



PENDANT SOFFIT LUMINAIRE

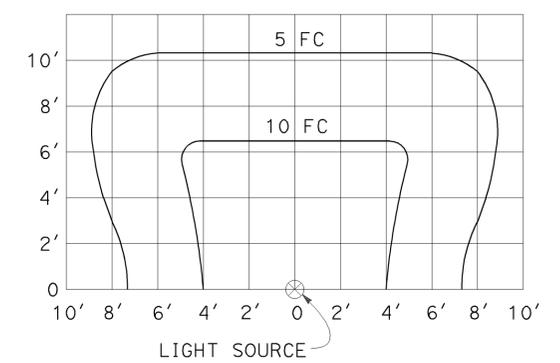
17' Mounting Height
 Lamp operated at 5,800 lm
 70-W high pressure sodium lamp
 ANSI Designation S62

ISOFOOTCANDLE CURVE - MINIMUM



FLUSH SOFFIT LUMINAIRE

17' Mounting Height
 Lamp operated at 5,800 lm
 70-W high pressure sodium lamp
 ANSI Designation S62



**SIGN LIGHTING FIXTURE
 ISOFOOTCANDLE DIAGRAM**

NOTES:

- Curves represent the minimum footcandle (FC) of initial illumination on a 10'-0" x 20'-0" panel.
- The FC shown are with the fixture attached to the light fixture mounting channel which places the center of the source 4'-8" in front of panel and 1'-0" below the bottom edge.
- Applicable lamp: 85-W fluorescent phosphor coated induction lamp.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
 (ISOFOOTCANDLE DIAGRAMS)**

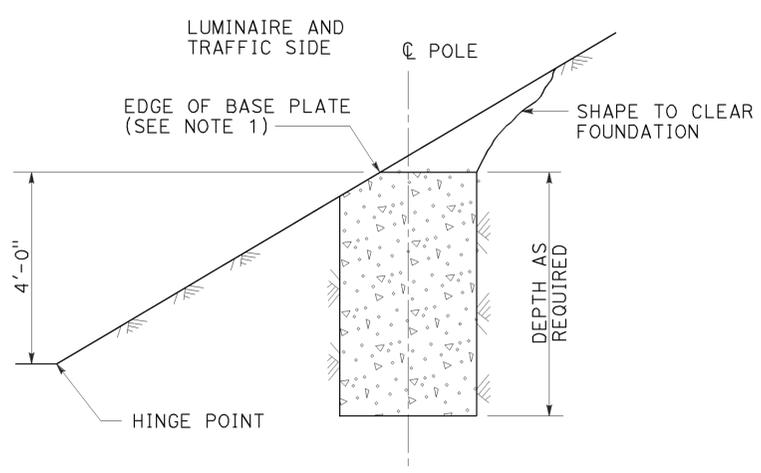
NO SCALE

RSP ES-10B DATED JULY 20, 2012 SUPPLEMENTS THE
 STANDARD PLANS BOOK DATED 2010.

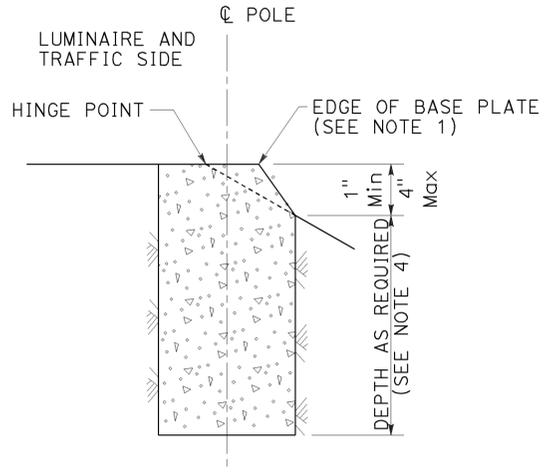
2010 REVISED STANDARD PLAN RSP ES-10B

TO ACCOMPANY PLANS DATED 2-23-15

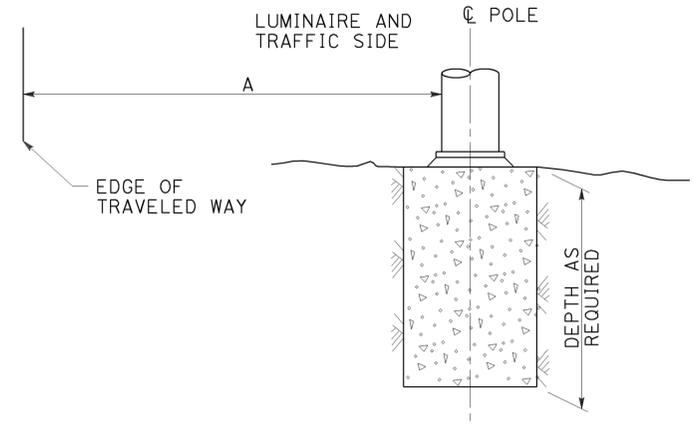
STANDARD TYPE	SETBACK (DIMENSION A)
32	30'-0" (Min)
31	20'-0" (Min)
15, 15D, 15-SB, 21, 21D, 30	ARM LENGTH (Min)



CUT SLOPES
STEEPER THAN 4:1,
LESS THAN 2:1
DETAIL A-1
 See Note 2 and 3



FILL SLOPES
STEEPER THAN 4:1,
LESS THAN 2:1
DETAIL A-2
 See Note 2 and 3

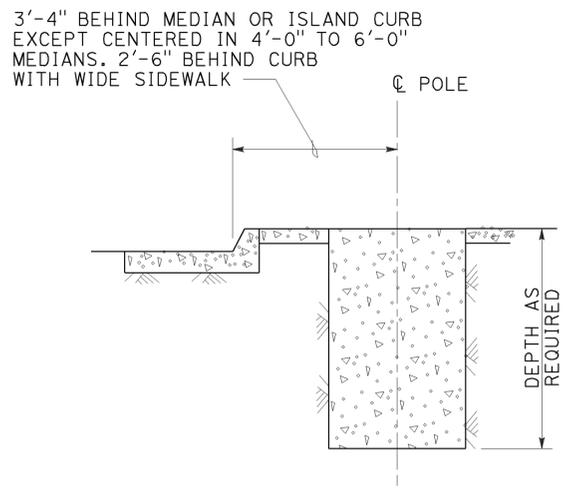


FLAT SECTIONS, CUT OR FILL SLOPES
4:1 OR FLATTER
DETAIL A-3
 See Note 2

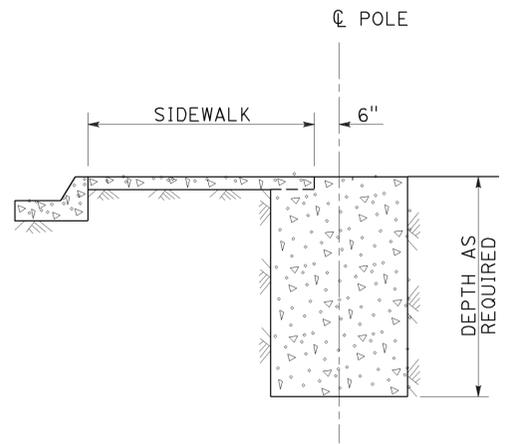
FOUNDATIONS ADJACENT TO ALL ROADWAYS EXCEPT
IN SIDEWALK, MEDIAN AND ISLAND AREAS
DETAIL A

NOTES:

1. Where a portion of the foundation is above grade, the top edges shall have a 1" chamfer.
2. Slopes shall be horizontal to vertical ratio (Horizontal : Vertical).
3. Horizontal setbacks on cut and fill slopes steeper than 4:1 shall not exceed the distance shown for flat sections.
4. CIDH embedment depth shall be increased beyond standard depths by the diameter of the CIDH.



MEDIAN, ISLAND
OR WIDE SIDEWALK
DETAIL B-1
 7' Wide and wider



NARROW SIDEWALK
DETAIL B-2
 Less than 7' wide

FOUNDATIONS IN SIDEWALK, MEDIAN AND ISLAND AREAS
DETAIL B

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(FOUNDATION INSTALLATIONS)
 NO SCALE

RSP ES-11 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-11
 DATED MAY 20, 2011 - PAGE 488 OF THE STANDARD PLANS BOOK DATED 2010.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	22.9/25.7	742	814

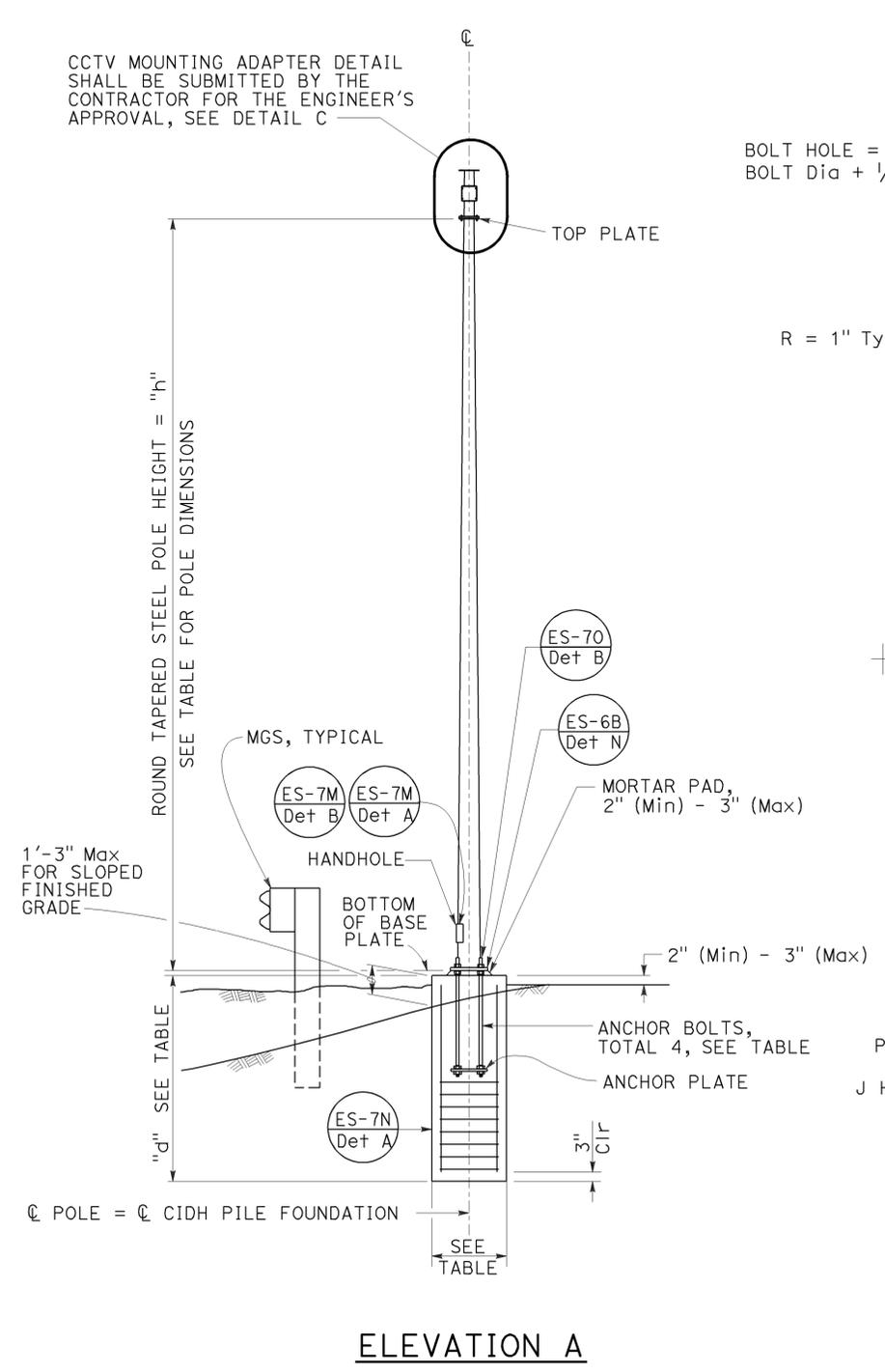
Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 November 15, 2013
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 Stanley P. Johnson
 No. C57793
 Exp. 3-31-14
 CIVIL
 STATE OF CALIFORNIA

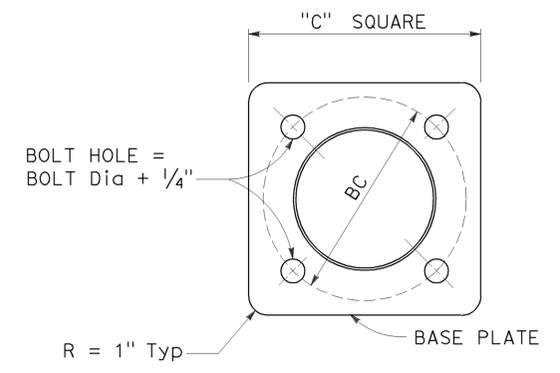
POLE TYPE	POLE DATA				BASE PLATE DATA				CIDH	
	HEIGHT "h"	Min OD		THICKNESS	"c"	THICKNESS	ANCHOR BOLT SIZE	BC = BOLT CIRCLE	Dia	"d"
		BASE	TOP							
CCTV 25	25'	7 ³ / ₈ "	3 ³ / ₄ "	0.1793"	1'-1"	1"	1/2" ϕ x 36"	11 ¹ / ₂ "	2'-6"	7'-0"
CCTV 30	30'	8"			1'-1 ¹ / ₂ "					7'-6"
CCTV 35	35'	8 ⁵ / ₈ "			1'-2"					8'-0"
CCTV 40	40'	9 ³ / ₈ "			1'-1 ¹ / ₂ "					8'-6"
CCTV 45	45'	10"			1'-3"					8'-6"

TO ACCOMPANY PLANS DATED 2-23-15

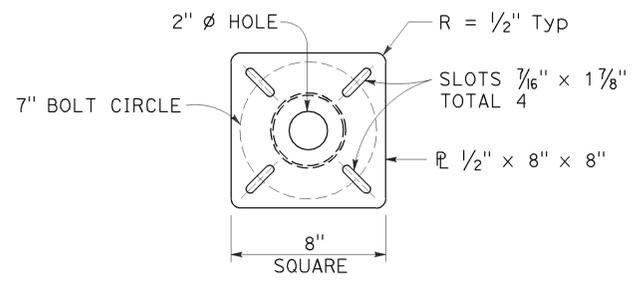
CCTV MOUNTING ADAPTER DETAIL SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE ENGINEER'S APPROVAL, SEE DETAIL C



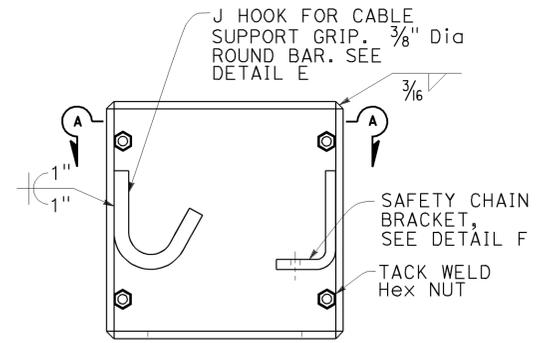
ELEVATION A



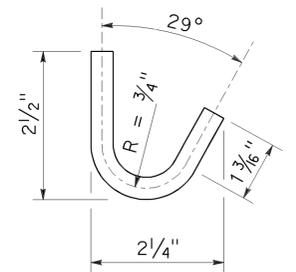
BASE PLATE
DETAIL A



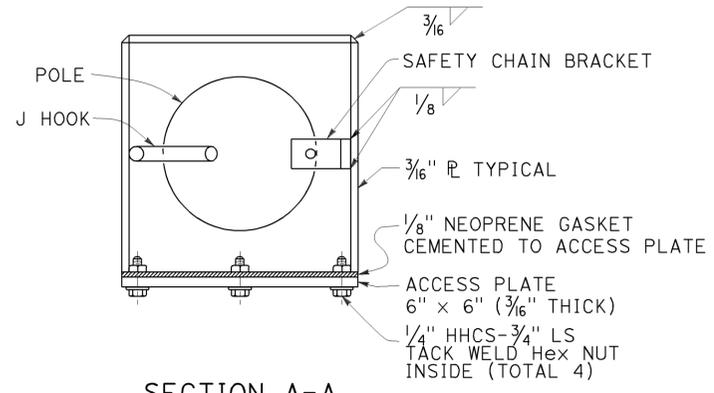
TOP PLATE
DETAIL B



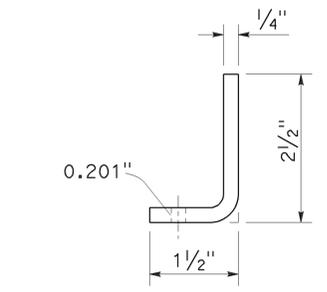
BOX ENCLOSURE
DETAIL D



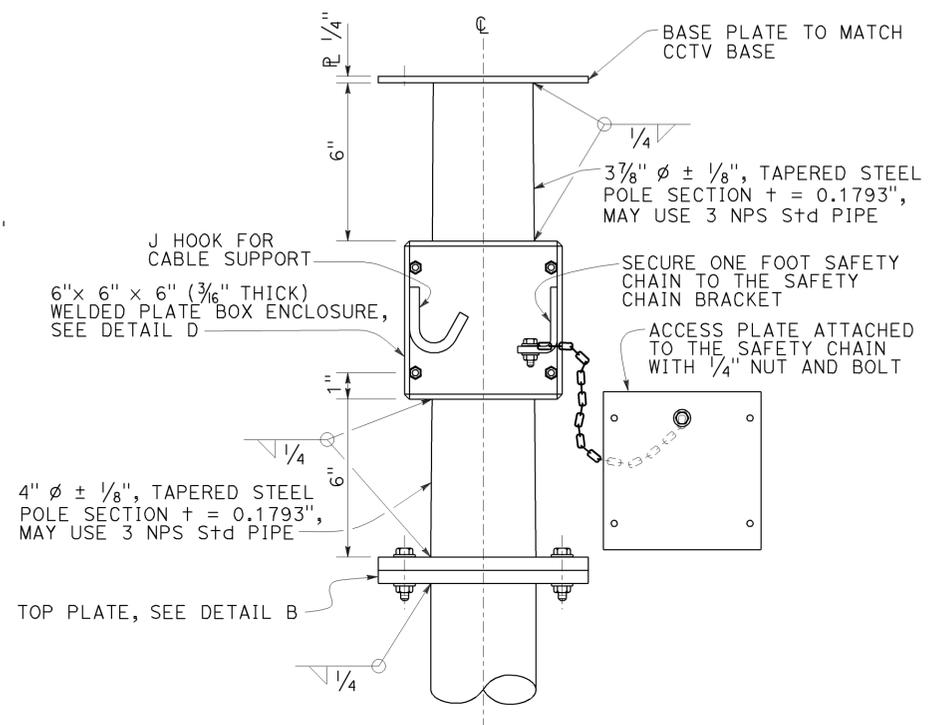
J HOOK
DETAIL E



SECTION A-A



SAFETY CHAIN BRACKET
DETAIL F



CLOSED CIRCUIT TELEVISION MOUNTING ADAPTER
DETAIL C

NOTES:

- The Contractor shall verify controlling field dimensions before ordering or fabricating any material.
- During pole installation, the post shall be raked as necessary with the use of leveling nuts to provide a plumb pole axis.
- Wind Loadings (3-second gust): 100 mph
- Unit Stresses (Structural Steel):
 - fy = 55,000 psi (tapered steel tube and anchor bolts)
 - fy = 50,000 psi (unless otherwise noted)
- Unit Stresses (Reinforced Concrete):
 - f'c = 3,625 psi
 - fy = 60,000 psi

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(CLOSED CIRCUIT TELEVISION,
25' TO 45' POLE)**
NO SCALE

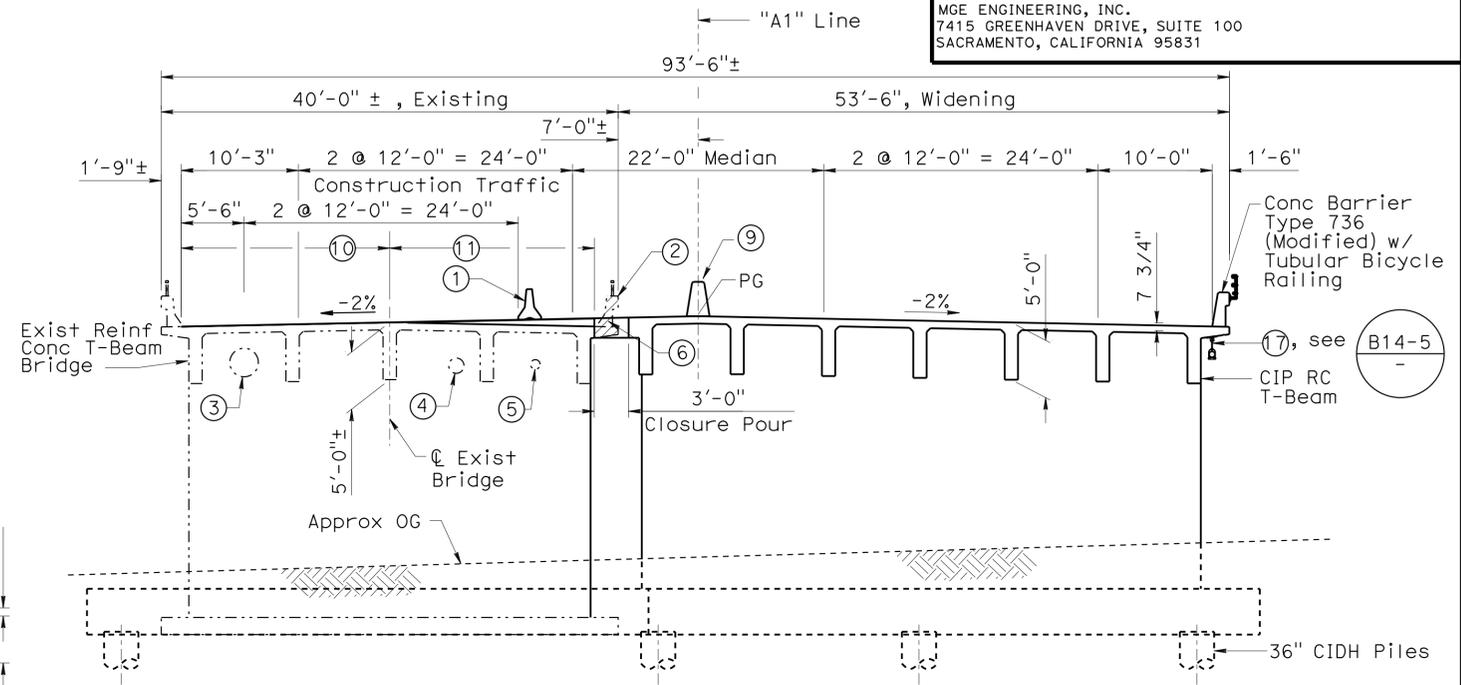
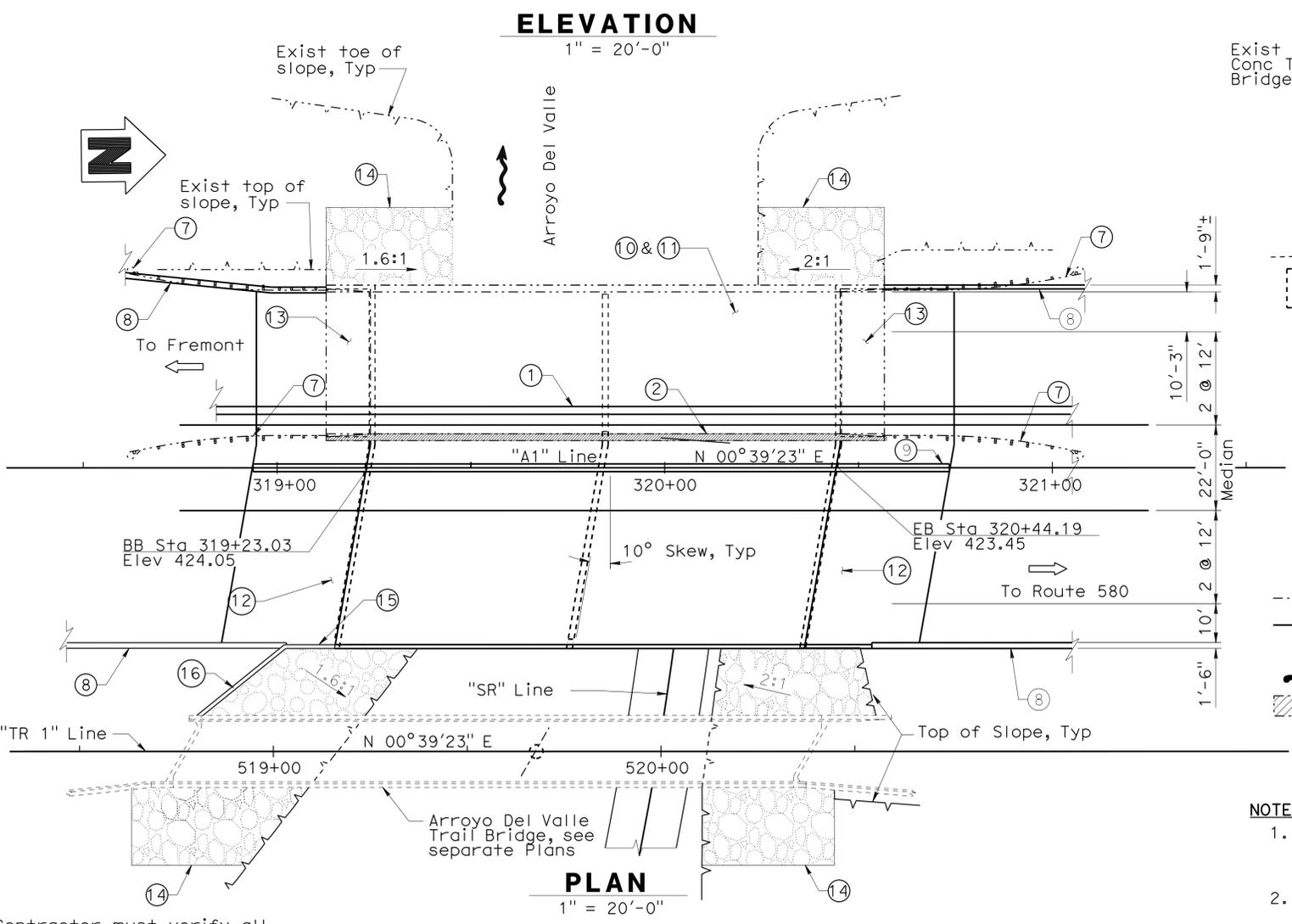
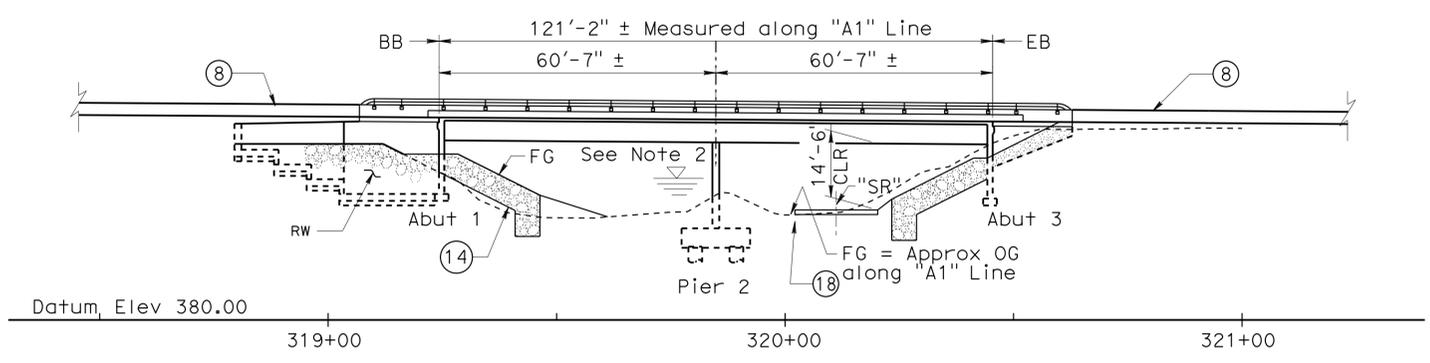
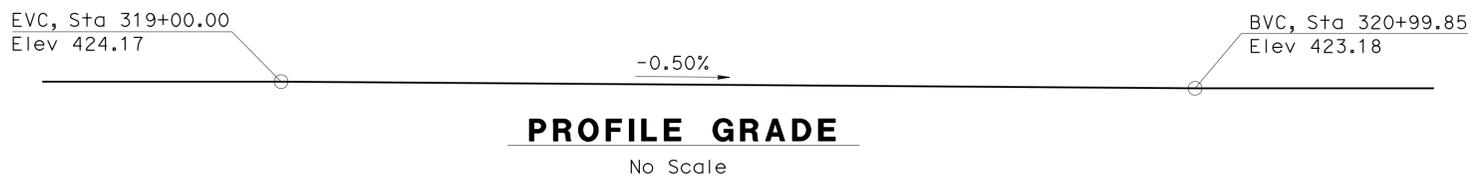
RSP ES-16B DATED NOVEMBER 15, 2013 SUPERSEDES STANDARD PLAN ES-16B DATED MAY 20, 2011 - PAGE 501 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-16B

2010 REVISED STANDARD PLAN RSP ES-16B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	743	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE
 2-23-15
 PLANS APPROVAL DATE
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 ALAMEDA COUNTY TRANSPORTATION COMMISSION
 1111 BROADWAY, SUITE 800
 OAKLAND, CA 94607
 MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831



- LEGEND**
- Indicates Exist Structure
 - Indicates New Construction
 - Indicates Direction of Travel
 - ~ Indicates Direction of Flow
 - ▨ Indicates Bridge Removal (Portion)
- NOTES:**
- For General Notes, Quantities and Index to Plans, see "GENERAL NOTES" Sheet.
 - For Pile Data Table, Spread Footing Data Table and Hydrologic Summary, see "FOUNDATION PLAN" sheet.
- NOTES:**
- Temporary Railing (Type K), see "Roadway Plans"
 - Remove Existing Barrier, Railing & Overhang
 - Existing 30" ∅ Steel Casing to remain
 - Existing 16" ∅ DIP Sewer Line to be relocated by others
 - Existing 12" ∅ Water Line to remain
 - Existing 2 - 3" ∅ Conduits to be relocated by others
 - Existing Metal Beam Guard Rail to be removed, see "Roadway Plans"
 - Concrete Barrier, see "Roadway Plans"
 - Concrete Barrier Type 60A
 - Remove Unsound Concrete, prepare Concrete Bridge Deck and place Polyester Concrete Overlay
 - Remove Unsound Concrete, prepare Concrete Bridge Deck, place Concrete Overlay (Varies, 10" max in Thickness) and place 3/4" Polyester Concrete Overlay
 - Structure Approach, Type N (30D)
 - Remove Exist Approach Slab and replace with Structure Approach, Type R (30D)
 - Rock Slope Protection, See "ROCK SLOPE PROTECTION" Sheet.
 - Paint "Bridge No. 33-0710" & "Arroyo Del Valle Bridge"
 - Retaining Wall, Type 1
 - 2" Supply Line (Bridge)
 - "SR" road, see "Roadway Plans"

Note:
The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

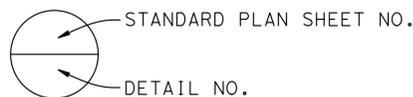
DESIGN OVERSIGHT David Soon 2-23-15 SIGN OFF DATE	DESIGN	BY X. Fu	CHECKED D. Wang	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	ARROYO DEL VALLE BRIDGE (WIDEN) GENERAL PLAN	
	DETAILS	BY K. Wang	CHECKED D. Wang	LAYOUT	BY X. Fu		CHECKED D. Wang		33-0710
	QUANTITIES	BY W. Sennett	CHECKED R. Huang	SPECIFICATIONS	BY R. E. Sennett	PLANS AND SPECS COMPARED X. Fu	POST MILES		
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)							UNIT: 0733	CONTRACT NO.: 04-297624	REVISION DATES
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS							PROJECT NUMBER & PHASE: 04000205811	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 1 OF 20 02/09/08 10/27/10 05/28/14 01/16/15

INDEX TO PLANS

Sheet No.	Title
1	GENERAL PLAN
2	GENERAL NOTES
3	DECK CONTOUR
4	FOUNDATION PLAN
5	ABUTMENT 1 LAYOUT
6	ABUTMENT 3 LAYOUT
7	ABUTMENT DETAILS NO. 1
8	ABUTMENT DETAILS NO. 2
9	RETAINING WALL, PLAN AND ELEVATION
10	PIER LAYOUT
11	PIER DETAILS
12	TYPICAL SECTION
13	GIRDER LAYOUT
14	CIDH CONCRETE PILE DETAILS
15	STRUCTURE APPROACH, TYPE N (30D)
16	STRUCTURE APPROACH, TYPE R (30D)
17	STRUCTURE APPROACH DRAINAGE DETAILS
18	TUBULAR BICYCLE RAILING DETAILS
19	ROCK SLOPE PROTECTION
20	LOG OF TEST BORINGS

STANDARD PLANS DATED 2010

A10A	ABBREVIATIONS (SHEET 1 OF 2)
A10B	ABBREVIATIONS (SHEET 2 OF 2)
A10C	LINES AND SYMBOLS (SHEET 1 OF 3)
A10D	LINES AND SYMBOLS (SHEET 2 OF 3)
A10E	LINES AND SYMBOLS (SHEET 3 OF 3)
A62B	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE SURCHARGE AND WALL
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE
A76A	CONCRETE BARRIER TYPE 60
B0-1	BRIDGE DETAILS
B0-3	BRIDGE DETAILS
B0-5	BRIDGE DETAILS
RSP B3-1A	RETAINING WALL TYPE 1 (CASE 1)
RSP B3-5	RETAINING WALL DETAILS NO. 1
B6-1	T-BEAM DETAILS
B6-10	UTILITY OPENINGS T-BEAM
B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
RSP B11-47	CABLE RAILING
RSP B11-56	CONCRETE BARRIER TYPE 736
B14-5	WATER SUPPLY LINE (DETAILS) (PIPE SIZE LESS THAN 4")
T3(A)	TEMPORARY RAILING (TYPE K)
T3(B)	TEMPORARY RAILING (TYPE K)



GENERAL NOTES LOAD AND RESISTANCE FACTOR DESIGN

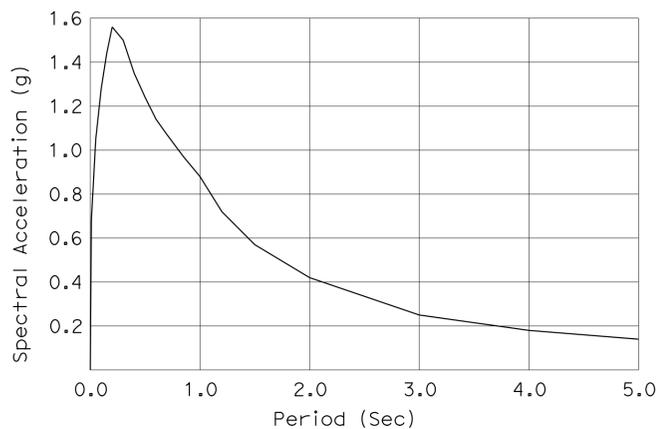
DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition and the Caltrans Amendments, Preface dated November 2011; except that Abutments and Concrete Barrier Type 736 are designed using Bridge Design Specifications ('96 AASHTO w/ Revisions by Caltrans)

ARROYO DEL VALLE BRIDGE (WIDEN) BRIDGE NO. 33-0710
SECTION DESIGN AND DETAILS Design Criteria (SDC) Version 10.1.7 dated April 2013

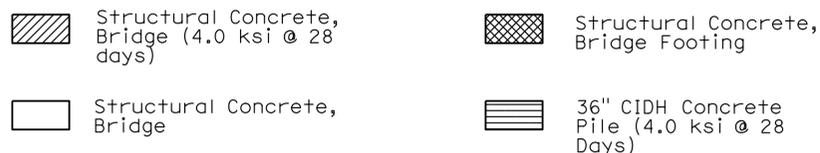
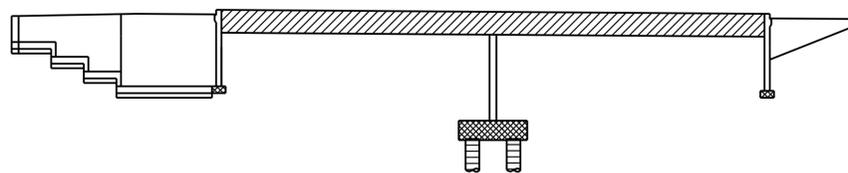
DEAD LOAD: Includes 35 psf for future wearing surface

LIVE LOADING: HL93 and Permit Design Vehicle

SEISMIC LOADING: Modified Caltrans SDC ARS Curve
Peak Ground Acceleration = 0.61g
Vs30 = 360 m/s



CONCRETE: $f_y = 60$ ksi
 $f'_c = 3.6$ ksi
 $n = 8$
See "Prestressing Notes" on "Girder Layout" sheet.



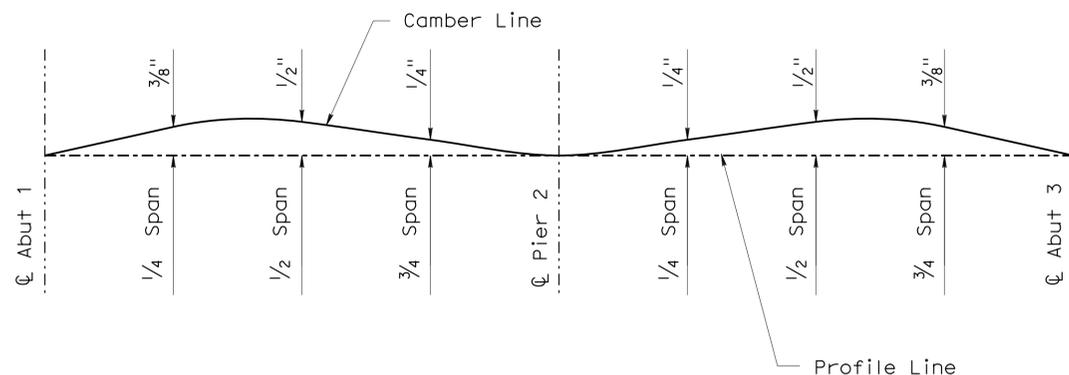
CONCRETE STRENGTH AND TYPE LIMITS

No Scale

ARROYO DEL VALLE BRIDGE (WIDEN) BRIDGE NO. 33-0710

QUANTITIES

REMOVE UNSOUND CONCRETE	11	CF
PREPARE CONCRETE BRIDGE DECK SURFACE	2,690	SQFT
FURNISH POLYESTER CONCRETE OVERLAY	1,820	CF
PLACE POLYESTER CONCRETE OVERLAY	4,375	SQFT
BRIDGE REMOVAL (PORTION)	LUMP	SUM
STRUCTURE EXCAVATION (BRIDGE)	603	CY
STRUCTURE EXCAVATION (TYPE D)	399	CY
STRUCTURE EXCAVATION (RETAINING WALL)	241	CY
STRUCTURE BACKFILL (BRIDGE)	855	CY
STRUCTURE BACKFILL (RETAINING WALL)	294	CY
2" SUPPLY LINE (BRIDGE)	121	LF
36" CAST-IN-DRILLED-HOLE CONCRETE PILING	620	LF
STRUCTURAL CONCRETE, BRIDGE FOOTING	230	CY
STRUCTURAL CONCRETE, BRIDGE	485	CY
STRUCTURAL CONCRETE, RETAINING WALL	71	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	118	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	88	CY
DRILL AND PRESSURE GROUT REINFORCEMENT	140	LF
DRILL AND BOND DOWEL	290	LF
JOINT SEAL (MR 1/2")	190	LF
BAR REINFORCING STEEL (BRIDGE)	281,159	LB
BAR REINFORCING STEEL (RETAINING WALL)	10,102	LB
HEADED BAR REINFORCEMENT	144	EA
ROCK SLOPE PROTECTION (LIGHT, METHOD B) (CY)	380	CY
ROCK SLOPE PROTECTION (1T, METHOD B)	1,390	CY
ROCK SLOPE PROTECTION FABRIC (CLASS 8)	976	SQYD
TUBULAR BICYCLE RAILING	151	LF
CABLE RAILING	28	LF
CONCRETE BARRIER (TYPE 60A)	180	LF
CONCRETE BARRIER (TYPE 736 MODIFIED)	151	LF



Note: Camber shown does not include allowance for falsework settlement. Camber values are shown in inches.

CAMBER DIAGRAM

Note:
The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

DESIGN OVERSIGHT
David Soon
2-23-15
SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER
Xiangyang Fu

BRIDGE NO.
33-0710
POST MILES
24.8

ARROYO DEL VALLE BRIDGE (WIDEN)
GENERAL NOTES

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

0 1 2 3

UNIT: 0733
PROJECT NUMBER & PHASE: 04000205811 CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING
EARLIER REVISION DATES

REVISION DATES
10/27/10 05/29/14 11/17/14 01/16/15

SHEET 2 OF 20

FILE => 33-0710-a-1tp.dgn

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:42

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	745	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

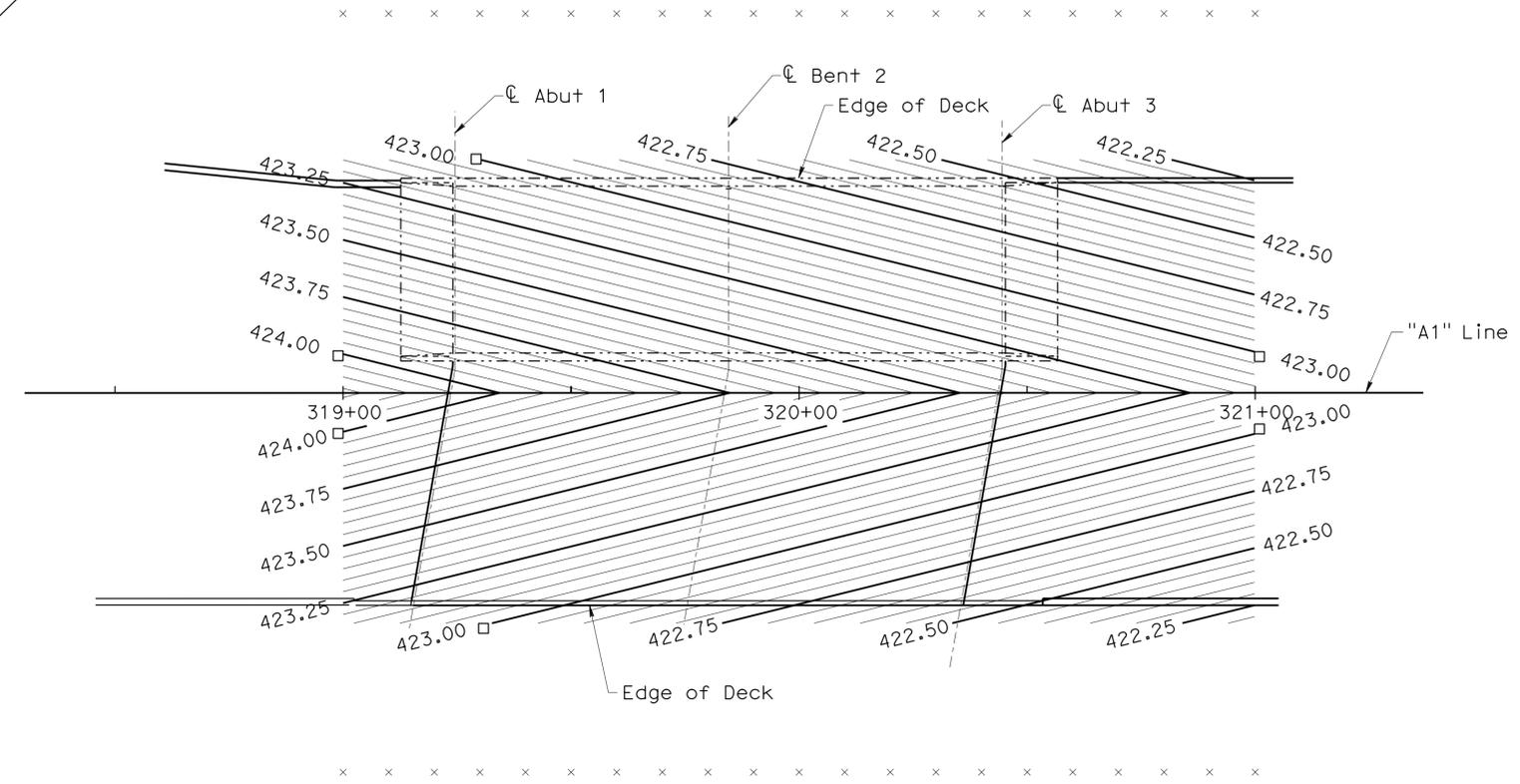
2-23-15
 PLANS APPROVAL DATE

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ALAMEDA COUNTY TRANSPORTATION COMMISSION
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MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831



DECK CONTOURS
 Scale: 1" = 20'

LEGEND

- × Indicates 10'-0" intervals along Station Line
- Indicates 1' Contours

NOTES:

1. Contour interval is 0.05 feet.
2. Contours do not include camber.

Note:
 The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

David Soon
 DESIGN OVERSIGHT David Soon
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED X. Fu

**PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION**

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO.	33-0710
POST MILES	24.8

**ARROYO DEL VALLE BRIDGE (WIDEN)
 DECK CONTOURS**

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
5/28/14 9/12/14 11/27/14 01/16/15	3	20

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:42

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	746	814

Xiangyang Fu 01/16/15
REGISTERED CIVIL ENGINEER DATE

2-23-15
PLANS APPROVAL DATE

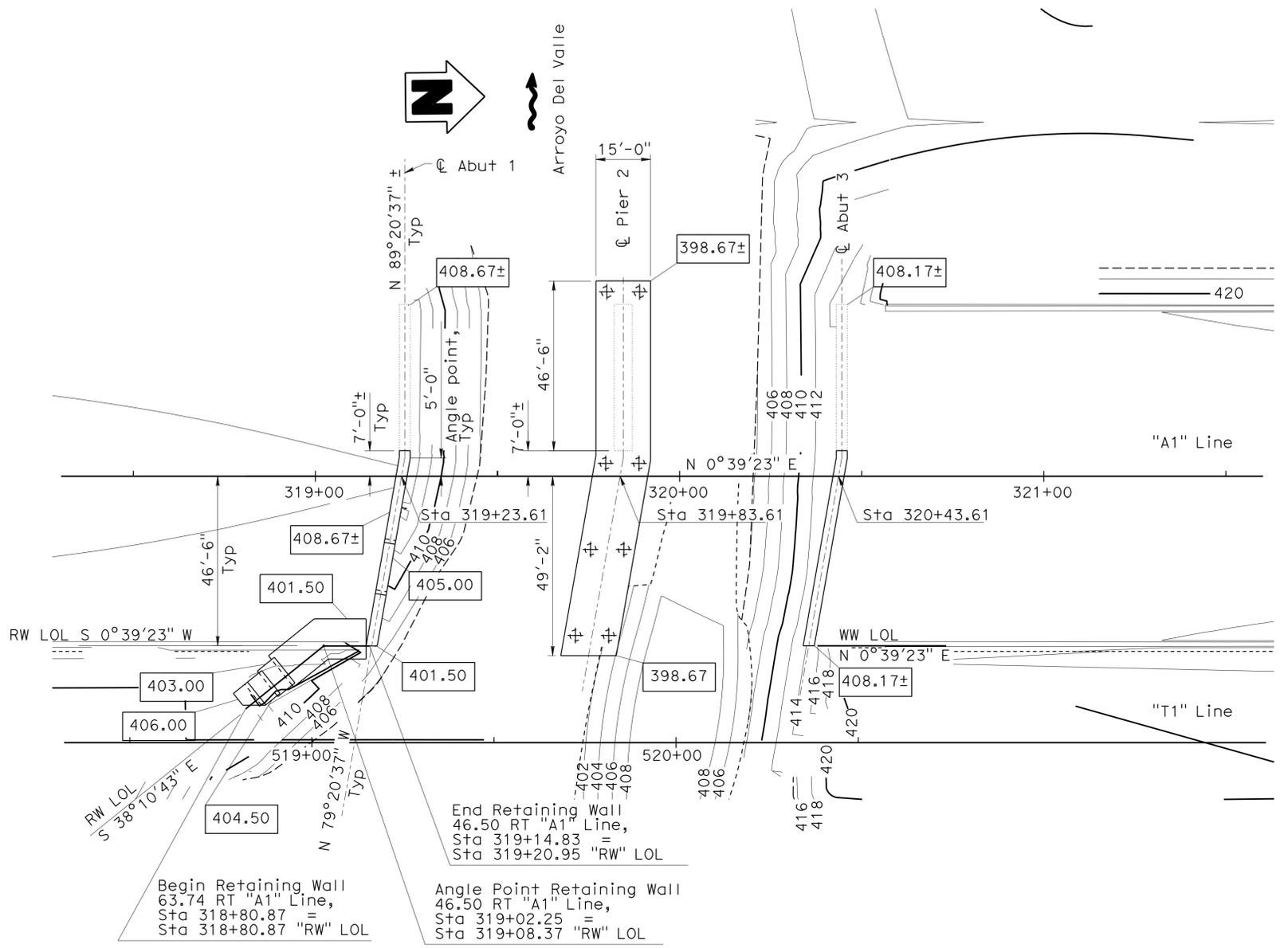
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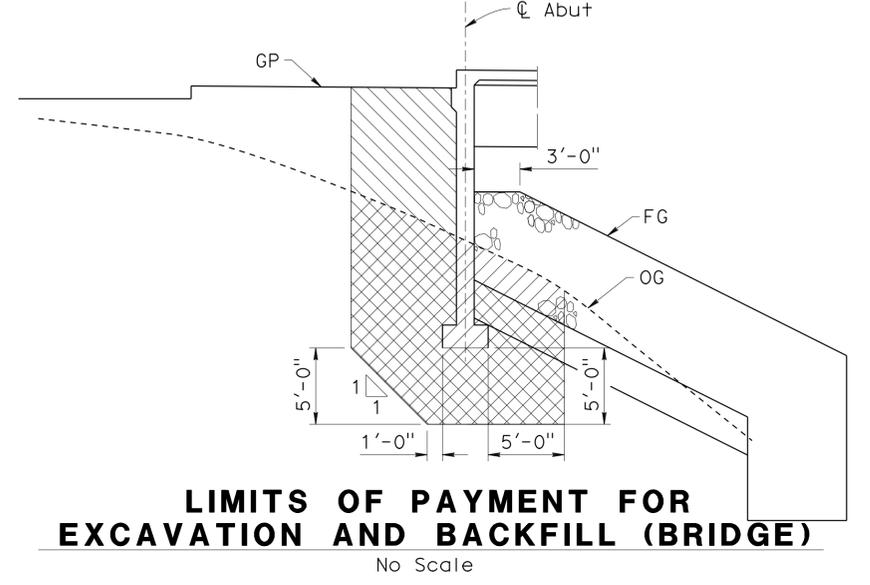
MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831

LEGEND

- Indicates Existing Structure
- Indicates New Construction
- ~~~~~ Indicates Direction of Flow
- XXX.xx Indicates Bottom of Footing Elevation
- ⊕ Indicates 36" CIDH Piles
- ▨ Indicates structure excavation (Bridge)
- ▩ Indicates structure backfill (Bridge)



FOUNDATION PLAN
1" = 20'-0"



LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL (BRIDGE)
No Scale

SPREAD FOOTING DATA TABLE

Support Location	Working Stress Design (WSD)		Load and Resistance Factor Design (LRFD)		
	Permissible Gross Contact Stress (Settlement) (ksf)	Allowable Gross Bearing Capacity (ksf)	Service Permissible Net Contact Stress (Settlement) (ksf)	Strength Factored Gross Nominal Bearing Resistance $\phi_b = 0.50$ (ksf)	Extreme Event Factored Gross Nominal Bearing Resistance $\phi_b = 1.00$ (ksf)
Abut 1	9.00	6.00	N/A	N/A	N/A
Abut 3	7.50	6.00	N/A	N/A	N/A

HYDROLOGIC SUMMARY

Drainage Area: 160 square miles

Design Flood	50	Base Flood	100
Discharge (Cubic feet per second)	5,400		7,000
Water Surface (Elevation at bridge)	410.06		411.18

BENCHMARK DATA

B-31 - MONUMENT GTS205 MONUMENT IS A SET 5/8" REBAR WITH PLASTIC CAP LABELED "GTS CTRL PT." MONUMENT IS LOCATED ON THE WEST SIDE OF ISABEL JUST SOUTH OF THE CREEK THAT IS +/- 1000 FT SOUTH OF DISCOVERY DR. IT IS 21 FT SOUTH OF 6FT CHAIN LINK FENCE AND 25.5 FT WEST OF ABUTMENT WALL.
ELEVATION: 419.84' NORTHING: 2072557.560
EASTING: 6183906.224

B-33 - MONUMENT GTS303 MONUMENT IS A SET 5/8" REBAR WITH PLASTIC CAP LABELED "GTS CTRL PT." MONUMENT IS LOCATED ON THE SOUTH SIDE OF THE CHANNEL THAT IS SOUTH OF DISCOVERY DR, +/- 200 FT WEST OF ISABEL, 8FT SOUTH OF ANGLE POINT OF CONCRETE WALL.
ELEVATION: 414.26' NORTHING: 2072505.810
EASTING: 6183714.251

PILE DATA TABLE

Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevations (ft)	Specified Tip Elevations (ft)
		Compression	Tension		
Pier 2	36" CIDH	1,230	0	323.0 (1) 375.0 (2)	323.0

The design tip elevation is controlled by the following demands:
(1) Compression; (2) Lateral.

Note:
The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

STEPHEN HUGO FU 01/16/15
REGISTERED PROFESSIONAL ENGINEER APPROVAL DATE

DESIGN OVERSIGHT <i>David Soor</i> 2-23-15 SIGN OFF DATE	SCALE: 1"=20' PHOTOGRAMMETRY AS OF: 11/10/2005	VERT. DATUM NAVD88 ALIGNMENT TIES	HORZ. DATUM NAD83 DRAFTED BY Abhijeet Bhoi	DESIGN BY X. Fu CHECKED D. Wang	DETAILS BY K. Wang CHECKED D. Wang	QUANTITIES BY W. Sennett CHECKED R. Huang	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 33-0710	PROJECT ENGINEER Xiangyang Fu	POST MILES 24.8	ARROYO DEL VALLE BRIDGE (WIDEN) FOUNDATION PLAN	REVISION DATES 10/21/10 05/29/14 11/27/14 01/16/15	SHEET 4	OF 20
-------------------------------------------------------------------	---------------------------------------------------	--------------------------------------	-----------------------------------------------	------------------------------------	---------------------------------------	----------------------------------------------	-------------------------------------------------------------------------	-----------------------	----------------------------------	--------------------	----------------------------------------------------	-------------------------------------------------------	------------	----------

FOUNDATION PLAN SHEET (ENGLISH) (REV. 03/14/12) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0733
PROJECT NUMBER & PHASE: 04000205811 CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

FILE => 33-0710-e-fpl.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	747	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

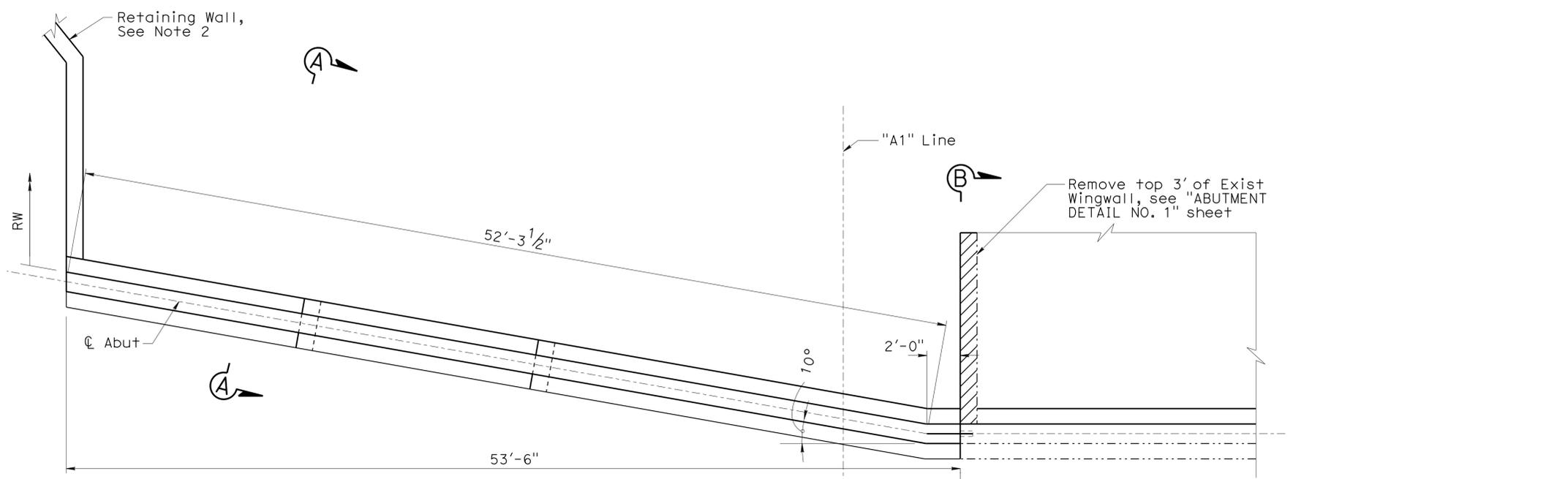
2-23-15
 PLANS APPROVAL DATE

XIANGYANG FU
 No. C 72514
 Exp. 06/30/16
 CIVIL
 STATE OF CALIFORNIA

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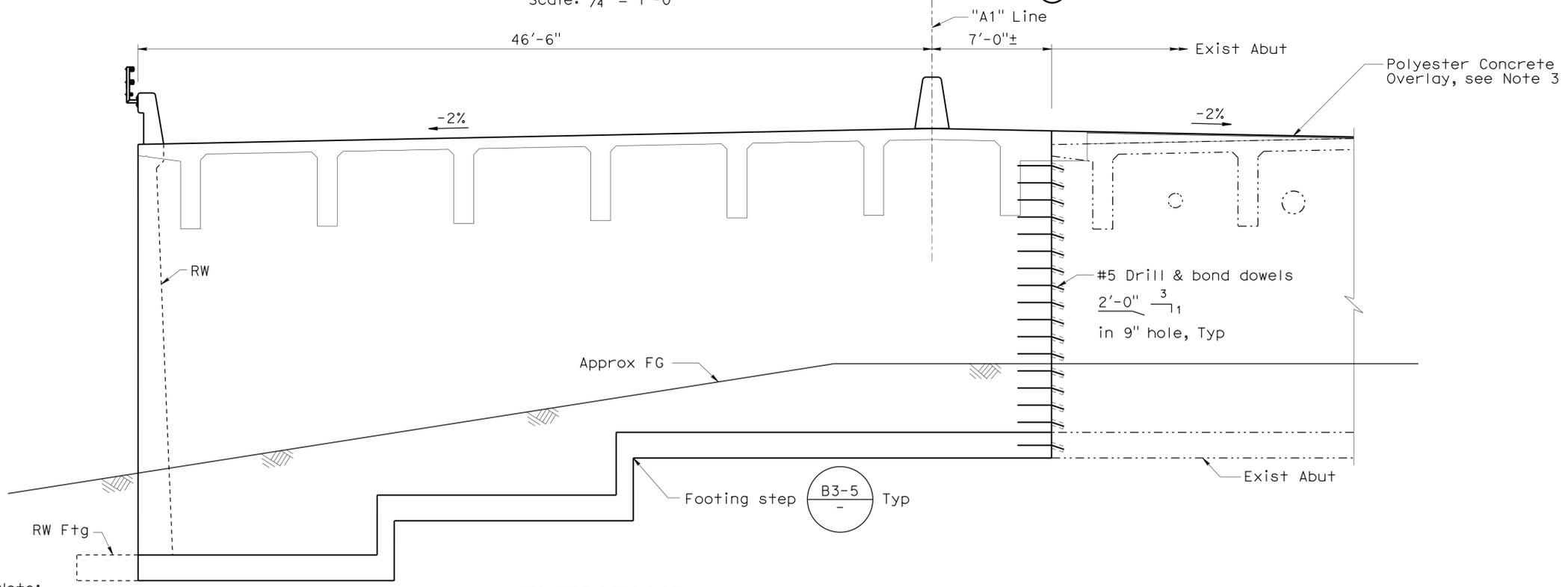
ALAMEDA COUNTY TRANSPORTATION COMMISSION
 1111 BROADWAY, SUITE 800
 OAKLAND, CA 94607

MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831



PLAN
 Scale: 1/4" = 1'-0"

Note: Approach slab not shown for clarity



ELEVATION
 Scale: 1/4" = 1'-0"

LEGEND

- Indicates Exist Structure
- Indicates New Construction
- ▨▨▨▨ Indicates Bridge Removal (Portion)

NOTES:

1. For Section "A-A" and Section "B-B", see "ABUTMENT DETAILS NO. 1" sheet.
2. For Retaining Wall details, see "RETAINING WALL, PLAN AND ELEVATION" sheet.
3. For Polyester Concrete Overlay details, see "TYPICAL SECTION" sheet.

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN BY: X. Fu
 CHECKED: D. Wang
 DETAILS BY: K. Wang
 CHECKED: D. Wang
 QUANTITIES BY: W. Sennett
 CHECKED: R. Huang

**PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION**

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO.
 33-0710
 POST MILES
 24.8

**ARROYO DEL VALLE BRIDGE (WIDEN)
 ABUTMENT 1 LAYOUT**

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10/21/10 05/29/14 11/27/14 01/16/15	5	20

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:42

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	749	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

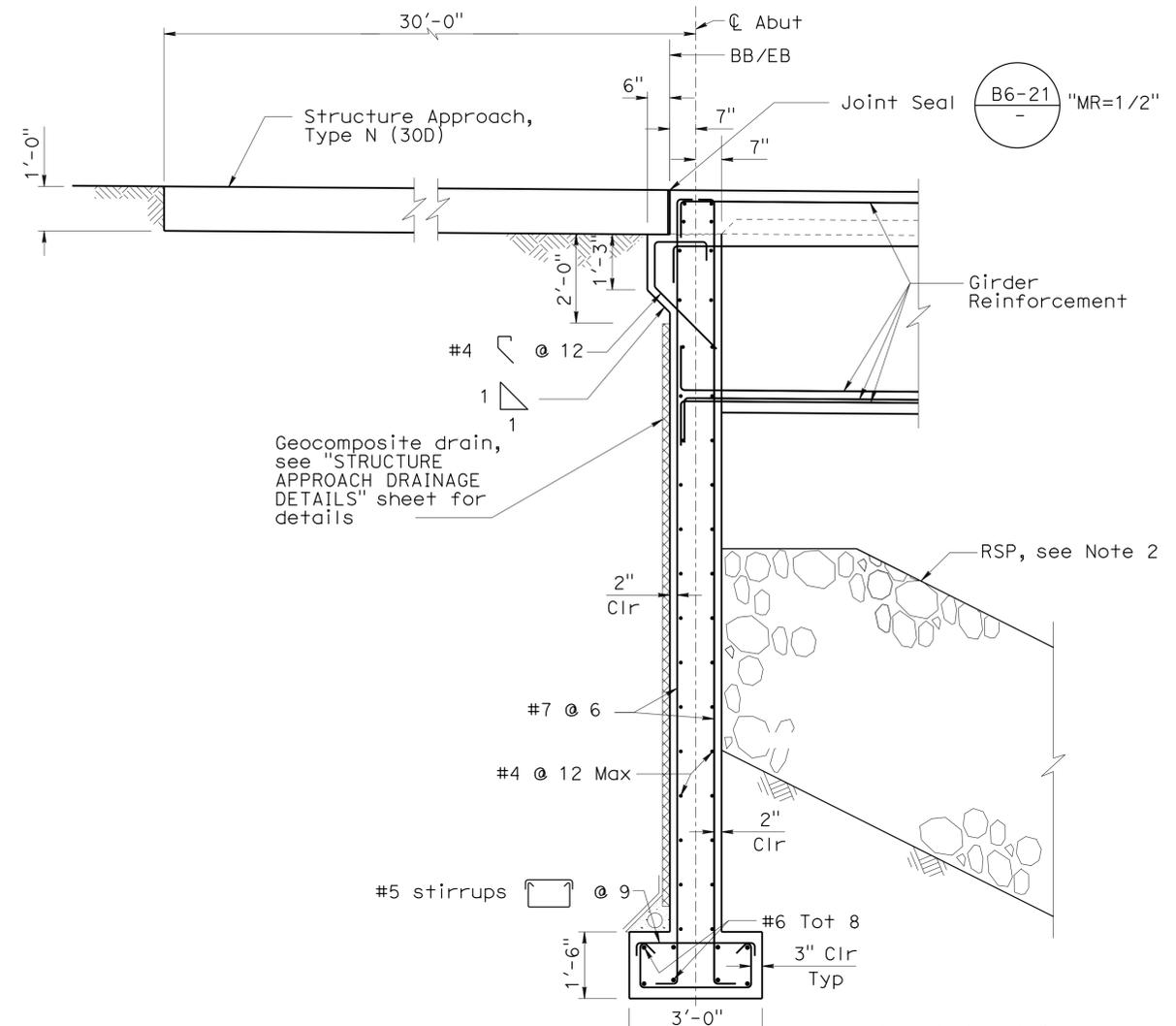
2-23-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 XIANGYANG FU
 No. C 72514
 Exp. 06/30/16
 CIVIL
 STATE OF CALIFORNIA

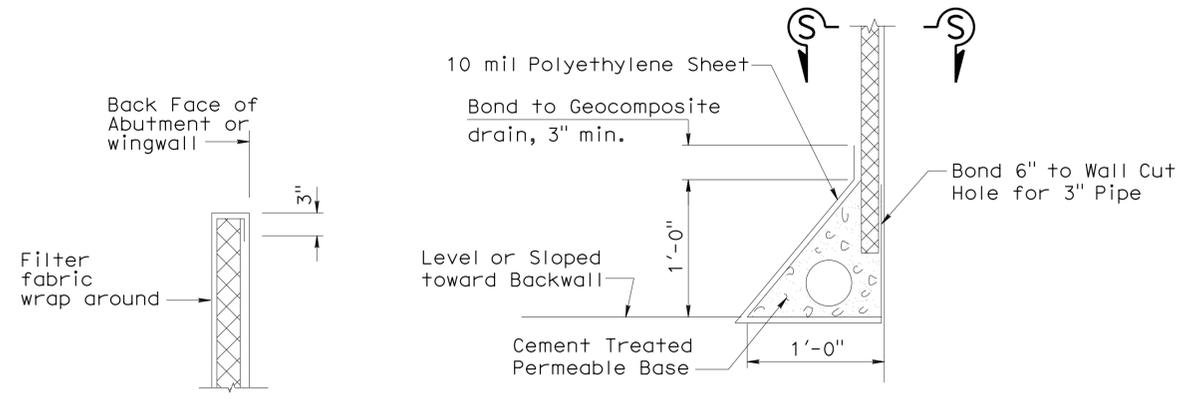
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SECTION A-A
 Scale: 1/2" = 1'-0"
 Note: Abutment 1 shown, and Abutment 3 similar

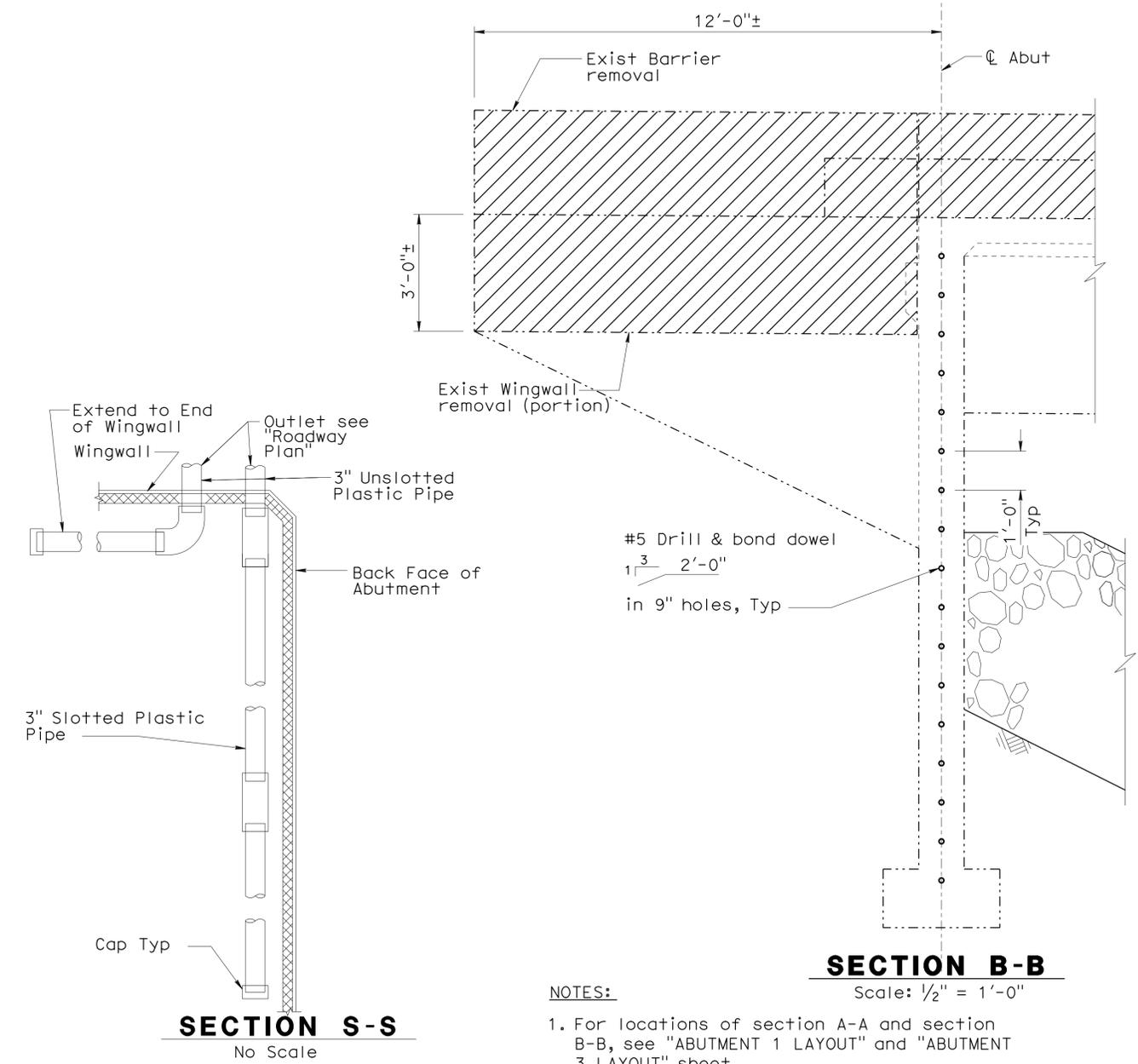


TOP DETAIL No Scale
BOTTOM DETAIL No Scale
WEEP HOLE AND GEOCOMPOSITE DRAIN No Scale

Note:
 The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

LEGEND

- Indicates New Construction
- - - - - Indicates Exist Structure
- ▨ Indicates Concrete Removal



SECTION S-S
 No Scale

SECTION B-B
 Scale: 1/2" = 1'-0"

- NOTES:**
- For locations of section A-A and section B-B, see "ABUTMENT 1 LAYOUT" and "ABUTMENT 3 LAYOUT" sheet.
 - For details of rock slope protection, see "ROCK SLOPE PROTECTION" sheet.

DESIGN OVERSIGHT
 David Soon
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO.	33-0710
POST MILES	24.8

ARROYO DEL VALLE BRIDGE (WIDEN)
ABUTMENT DETAILS NO. 1

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0	1	2	3
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UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10/27/10 05/29/14 11/27/14 01/16/15	7	20

FILE => 33-0710-f-a01d101.dgn

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:42

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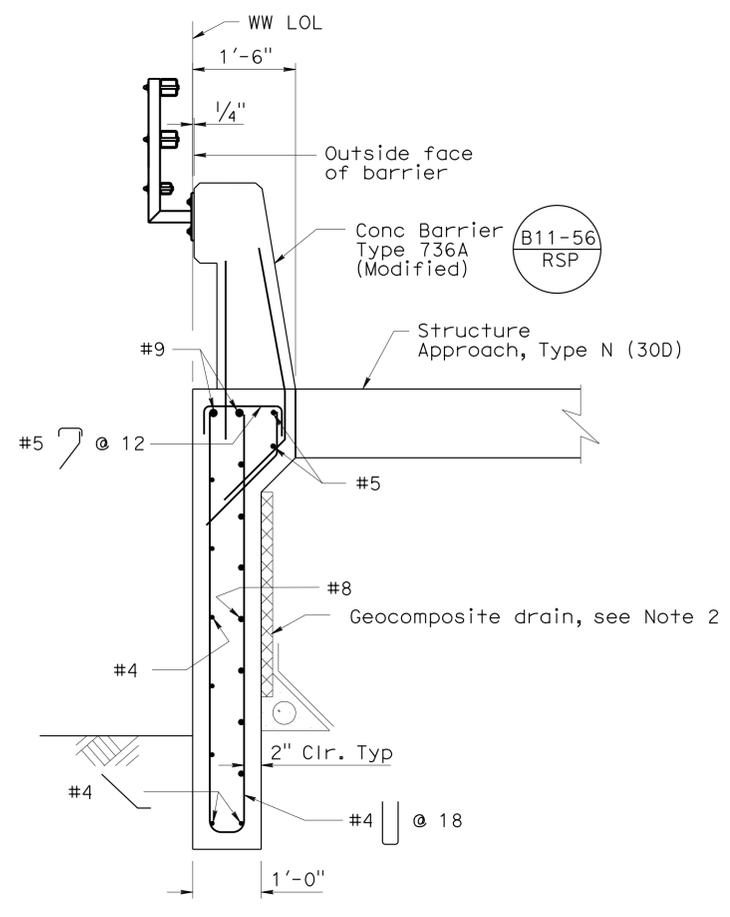
Xiangyang Fu 01/16/15
REGISTERED CIVIL ENGINEER DATE

2-23-15
PLANS APPROVAL DATE

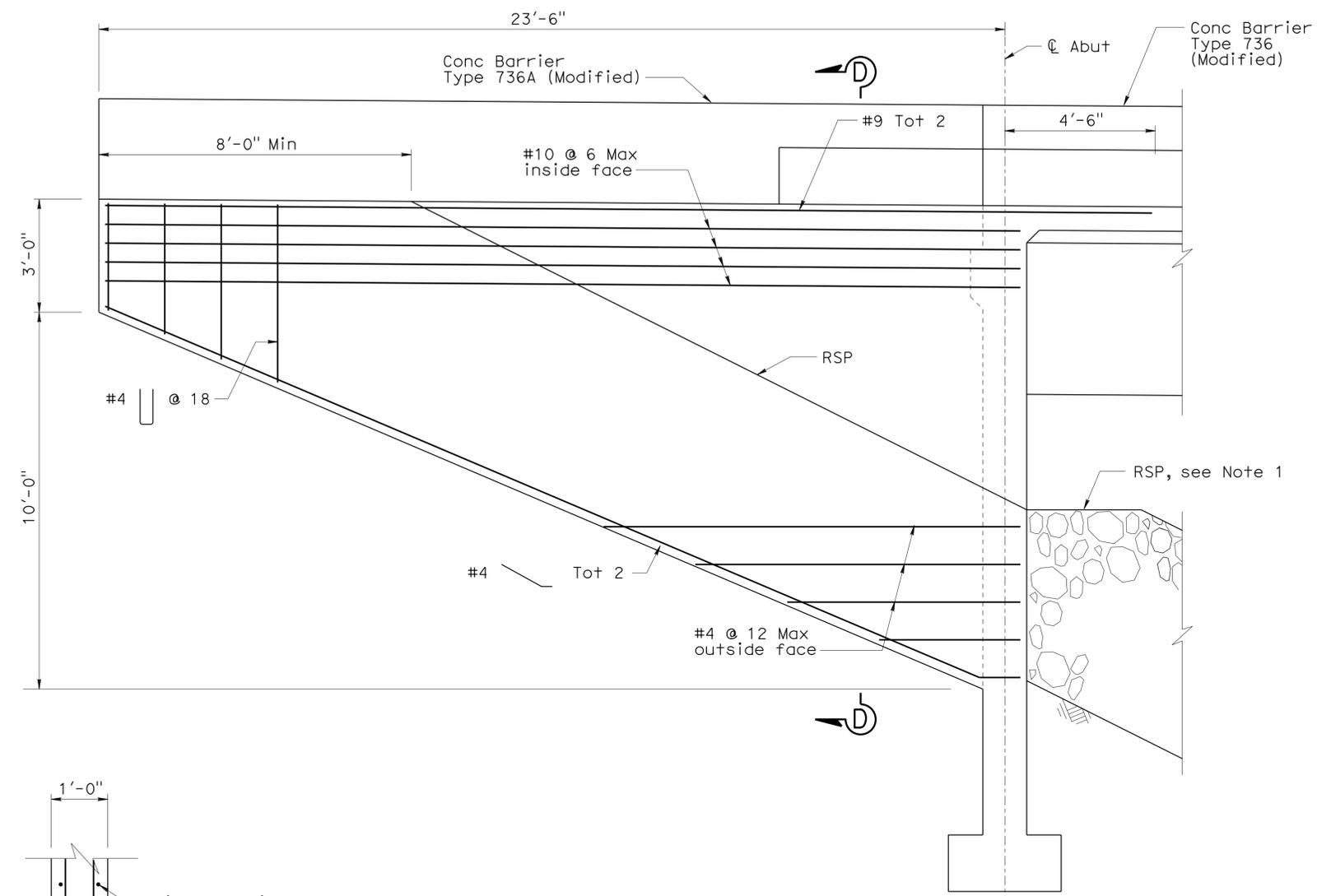
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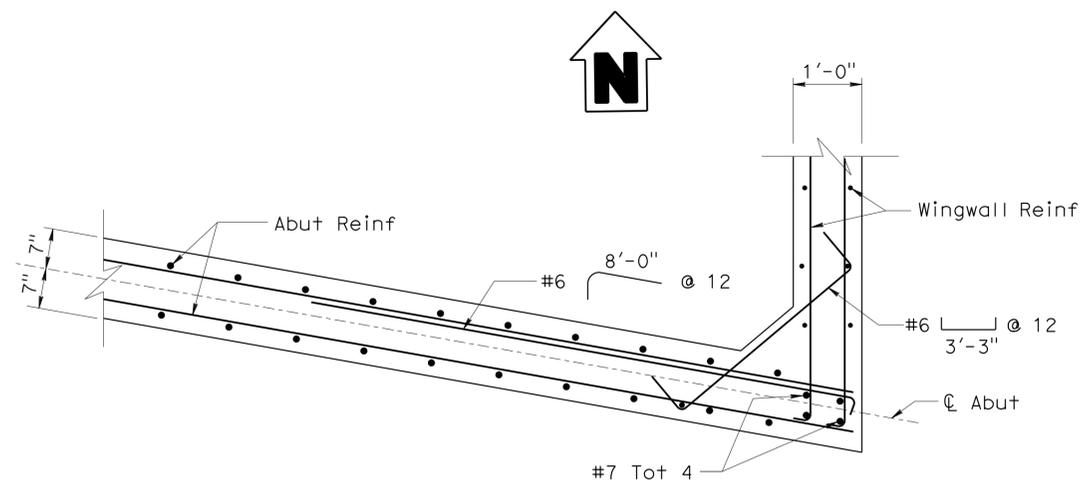
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7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



SECTION D-D
Scale: 3/4" = 1'-0"



ABUTMENT 3 WINGWALL ELEVATION
Scale: 1/2" = 1'-0"



SECTION C-C
Scale: 3/4" = 1'-0"

Note:
The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

- NOTES:
- For details of rock slope protection, see "ROCK SLOPE PROTECTION" sheet.
 - For details of geocomposite drain, see "STRUCTURE APPROACH DRAINAGE DETAILS" sheet.
 - For location of Section C-C, see "ABUTMENT 3 LAYOUT" sheet.

David Soon
DESIGN OVERSIGHT
2-23-15
SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
PROJECT ENGINEER

BRIDGE NO.	33-0710
POST MILES	24.8

ARROYO DEL VALLE BRIDGE (WIDEN)
ABUTMENT DETAILS NO. 2

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:42

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	751	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

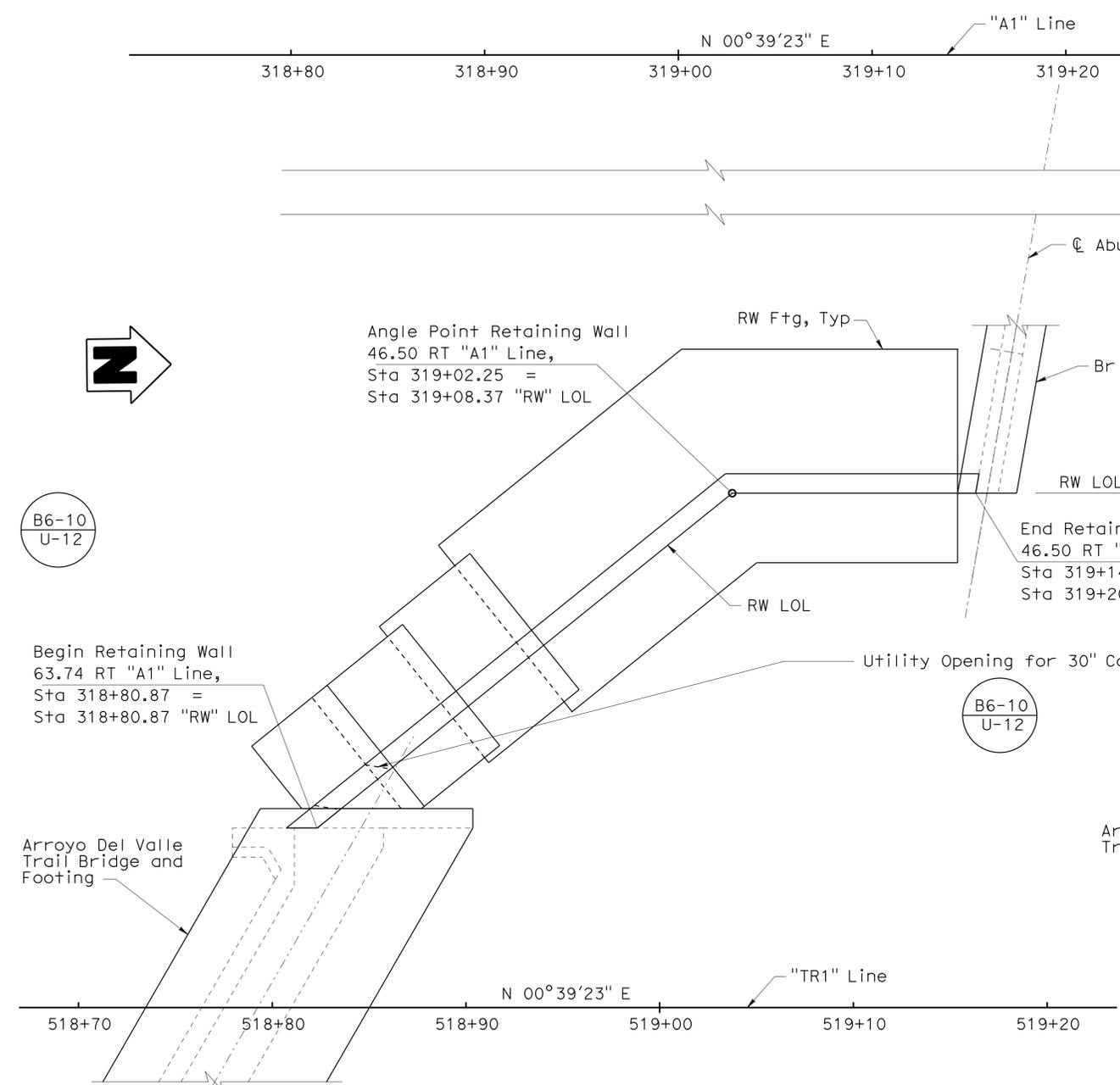
2-23-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 XIANGYANG FU
 No. C 72514
 Exp. 06/30/16
 CIVIL
 STATE OF CALIFORNIA

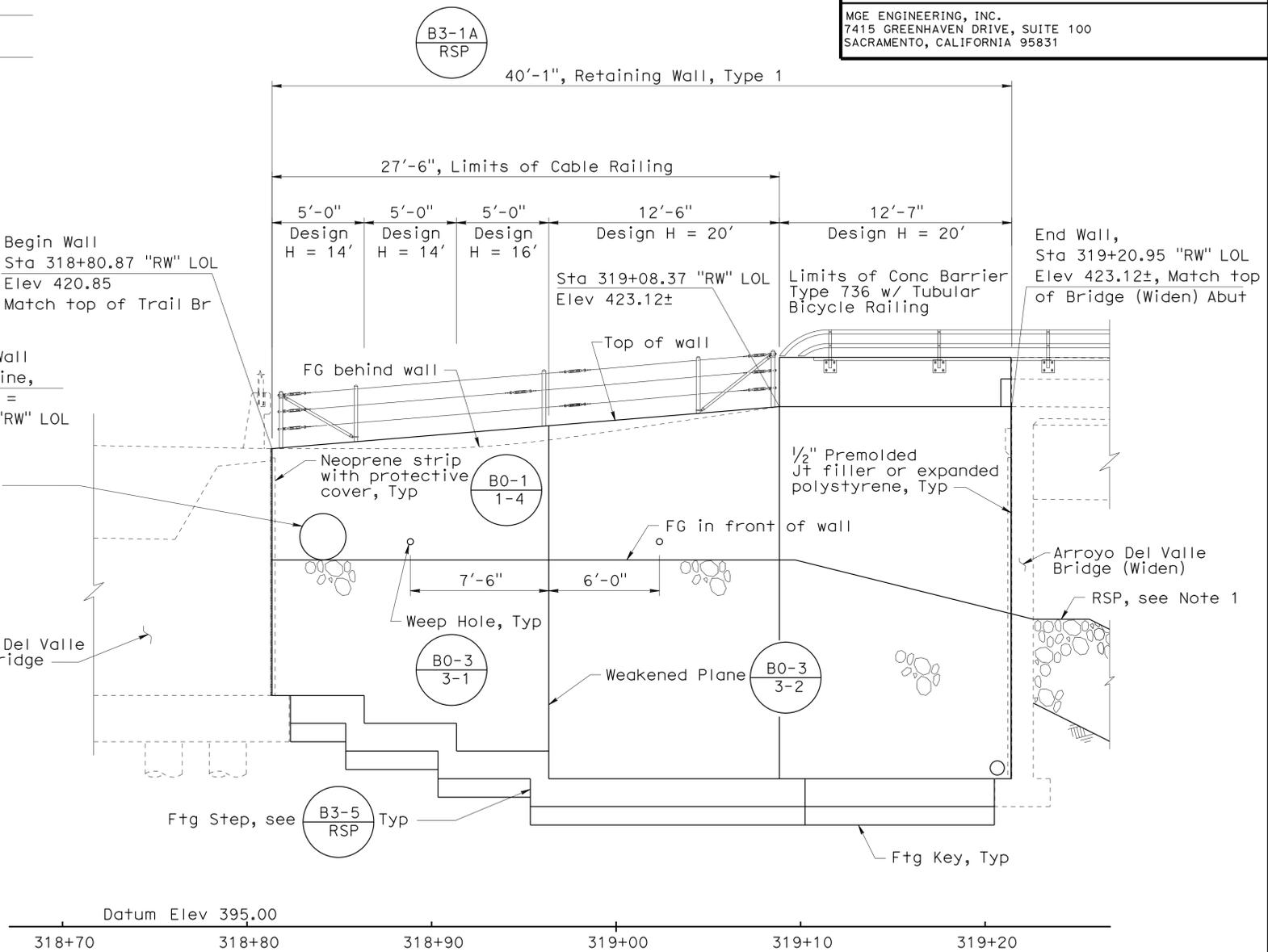
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RETAINING WALL PLAN
 Scale: 1/4" = 1'-0"



RETAINING WALL ELEVATION
 Scale: 1/4" = 1'-0"

- Notes:
- For Rock Slope Protection Details, see "ROCK SLOPE PROTECTION" sheet.
 - For reinforcement in retaining wall, see "TABLE OF REINFORCING STEEL DIMENSIONS AND DATA" on RSP B3-1A.

Note:
 The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO. 33-0710
 POST MILES 24.8

ARROYO DEL VALLE BRIDGE (WIDEN)
RETAINING WALL, PLAN AND ELEVATION

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10/21/10 05/29/14 11/27/14 01/16/15	9	20

FILE => 33-0710-g-rw_1a01.dgn

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:42

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	752	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

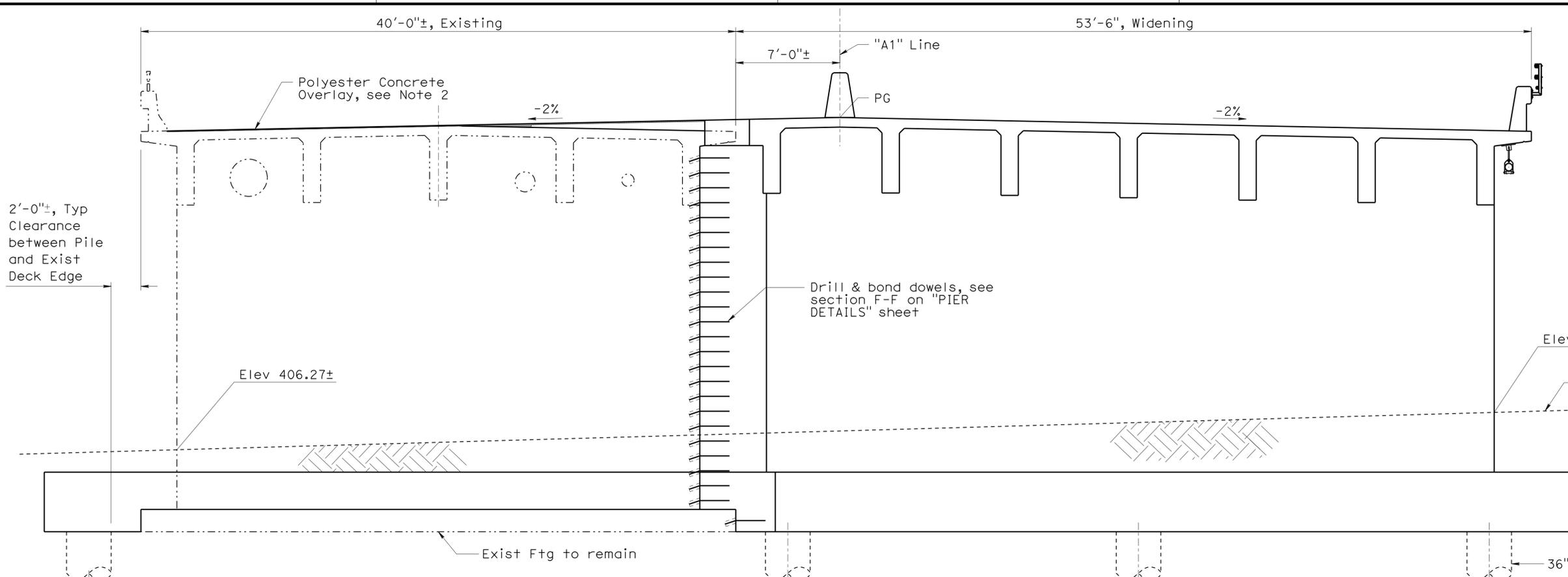
2-23-15
 PLANS APPROVAL DATE

XIANGYANG FU
 No. C 72514
 Exp. 06/30/16
 CIVIL
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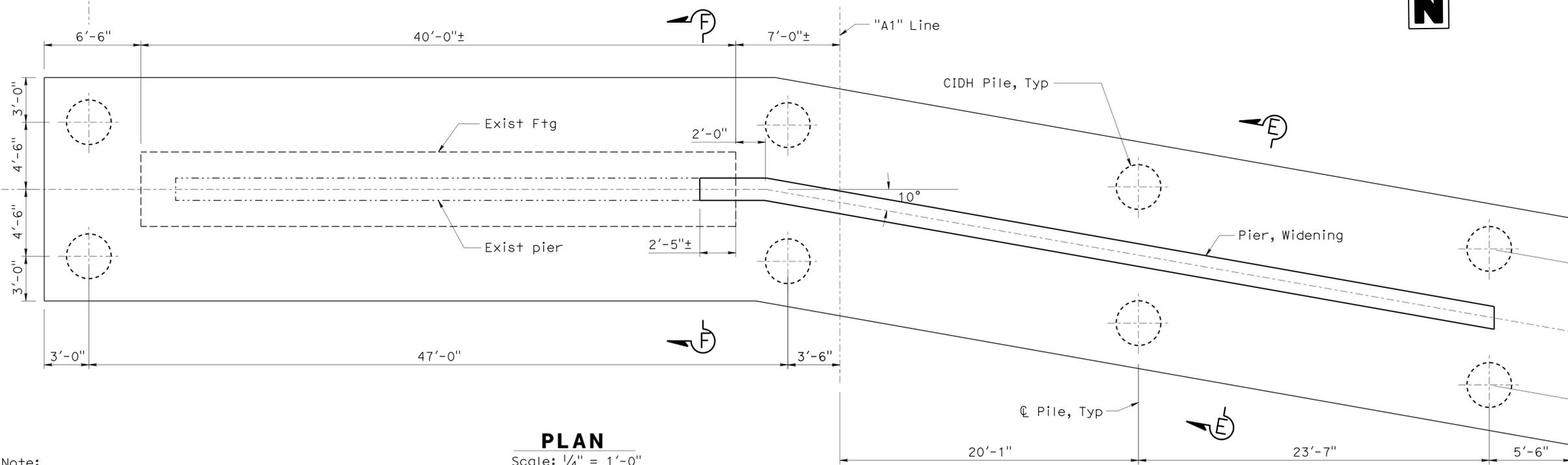
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ELEVATION
 Scale: 1/4" = 1'-0"



PLAN
 Scale: 1/4" = 1'-0"

LEGEND

———— Indicates New Construction
 - - - - - Indicates Exist Structure

- NOTES:**
- For Sections "E-E" and "F-F", see "PIER DETAILS" sheet.
 - For Polyester Concrete Overlay details, see "TYPICAL SECTION" sheet.

Note:
 The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

**PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION**

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO.	33-0710
POST MILES	24.8

**ARROYO DEL VALLE BRIDGE (WIDEN)
 PIER LAYOUT**

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811

CONTRACT NO.: 04-297624

REVISION DATES	SHEET	OF
10/21/10 05/29/14 11/27/14 01/16/15	10	20

DISREGARD PRINTS BEARING EARLIER REVISION DATES

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:42

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	753	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

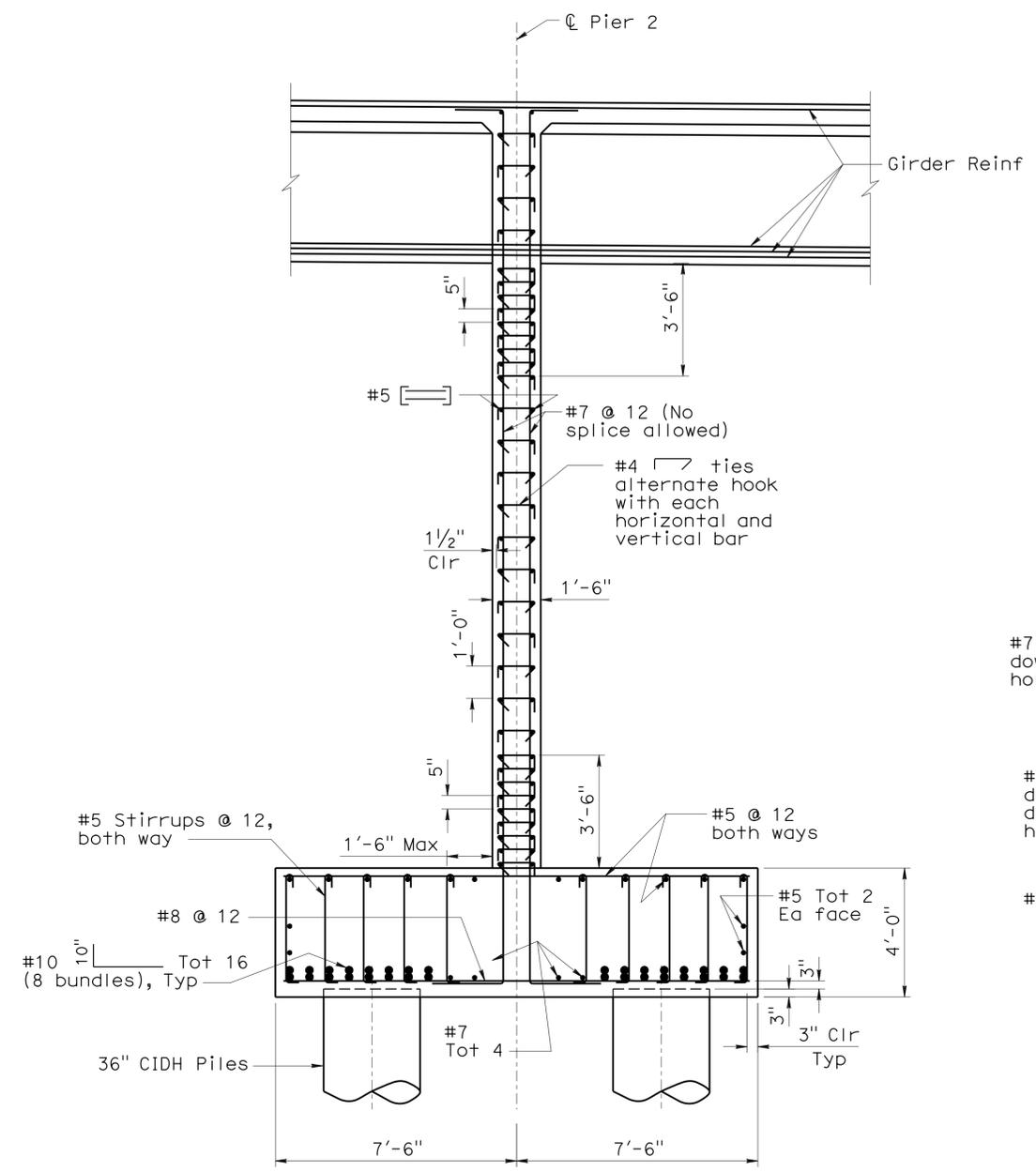
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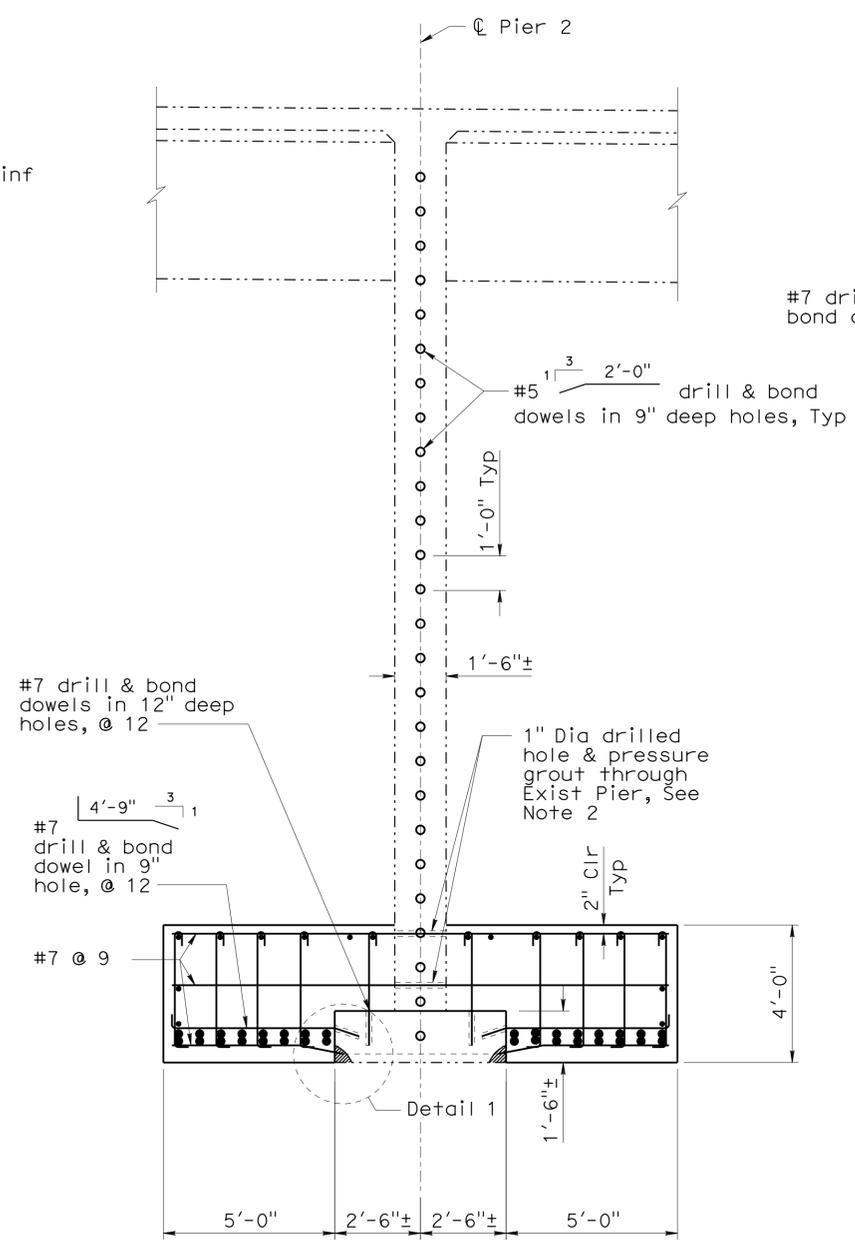
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MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831

REGISTERED PROFESSIONAL ENGINEER
 XIANGYANG FU
 No. C 72514
 Exp. 06/30/16
 CIVIL
 STATE OF CALIFORNIA

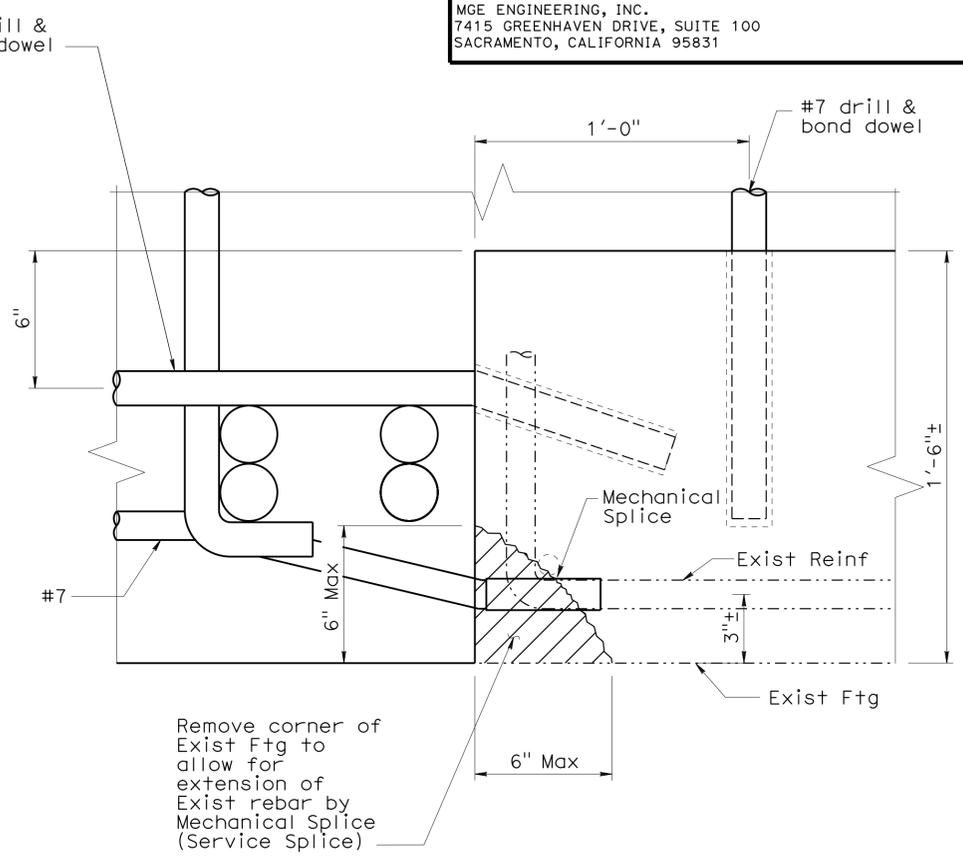


SECTION E-E
 Scale: 3/8" = 1'-0"



SECTION F-F
 Scale: 3/8" = 1'-0"

(For details not shown, see section A-A)



DETAIL 1
 Scale: 3" = 1'-0"

LEGEND

- Indicates New Construction
- - - - - Indicates Exist Structure
- ▨ Indicates Concrete removal (portion)

NOTES:

1. For location of Section E-E and Section F-F, see "PIER LAYOUT" sheet.
2. Contractor to locate existing reinforcement by non-destructive methods prior to drilling holes.

Note:
 The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

DESIGN OVERSIGHT
David Soon
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO.	33-0710
POST MILES	24.8

ARROYO DEL VALLE BRIDGE (WIDEN)
PIER DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811
 CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10/21/10 05/29/14 11/27/14 01/16/15	11	20

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:42

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	754	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

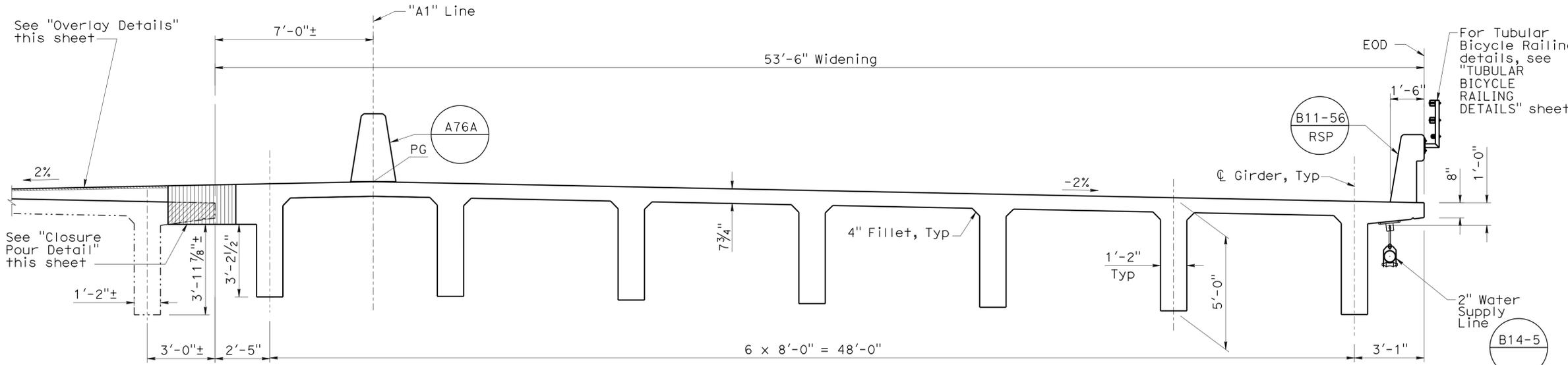
2-23-15
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REGISTERED PROFESSIONAL ENGINEER
 XIANGYANG FU
 No. C 72514
 Exp. 06/30/16
 CIVIL
 STATE OF CALIFORNIA



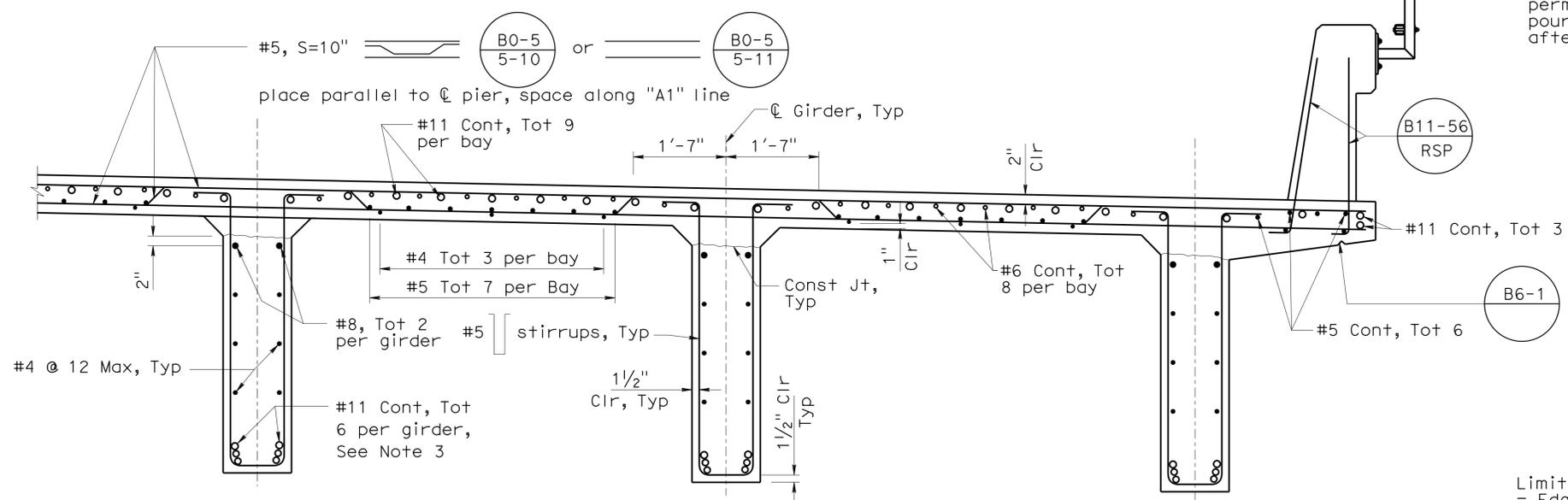
TYPICAL SECTION
 Scale: 3/8" = 1'-0"

FALSEWORK RELEASE

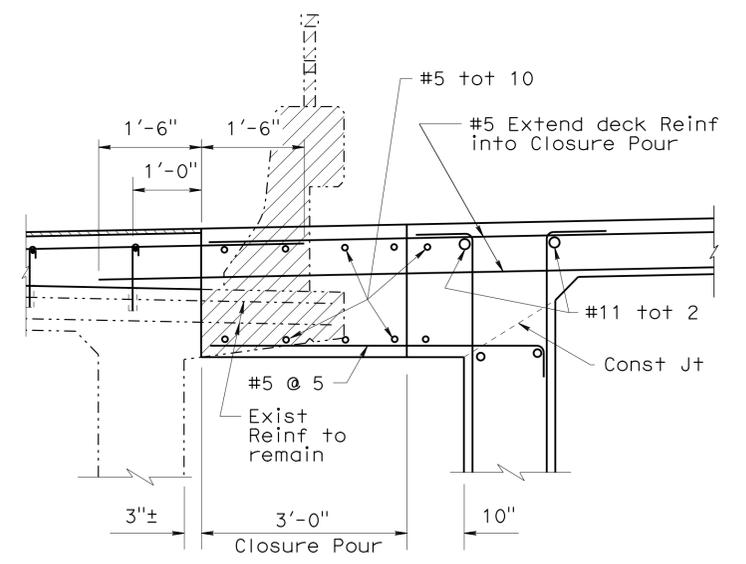
Falsework must be released as soon as permitted by the specifications. Closure pour must not be placed sooner than 60 days after the falsework has been released.

LEGEND

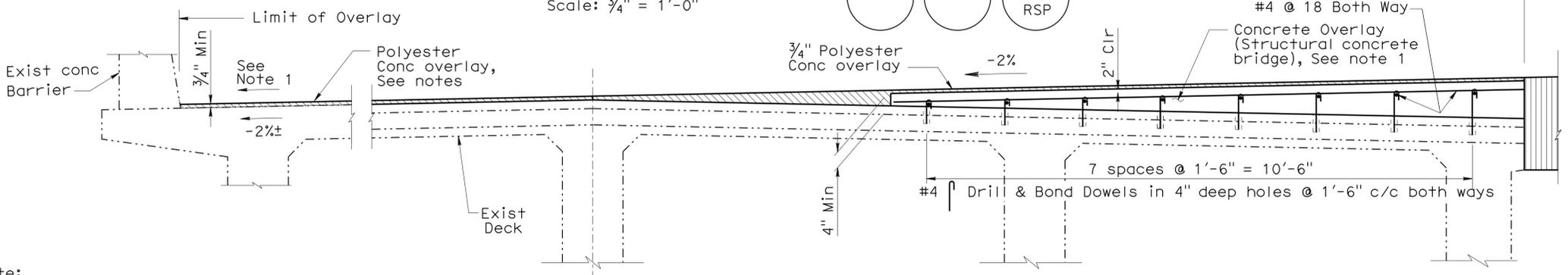
- Indicates New Construction
- - - - - Indicates Exist Structure
- [Hatched Box] Indicates Concrete and Barrier Removal
- [Vertical Line Box] Indicates Closure Pour
- [Diagonal Line Box] Indicates Polyester Concrete Overlay



PART TYPICAL SECTION
 Scale: 3/4" = 1'-0"



CLOSURE POUR DETAIL
 NTS



OVERLAY DETAILS
 3/4" = 1'-0"

NOTES:

1. Overlay thickness must be determined to achieve the profile grade and match cross slope as indicated on "GENERAL PLAN" sheet.
2. Where overlay thickness is less than 3/4", remove concrete deck surface such that a minimum of 3/4" Polyester Concrete overlay will be applied.
3. Reinforcement to be spliced at Bent 2.

Note:
 The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

DESIGN OVERSIGHT
David Soon
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO.	33-0710
POST MILES	24.8

ARROYO DEL VALLE BRIDGE (WIDEN)
TYPICAL SECTION

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	755	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

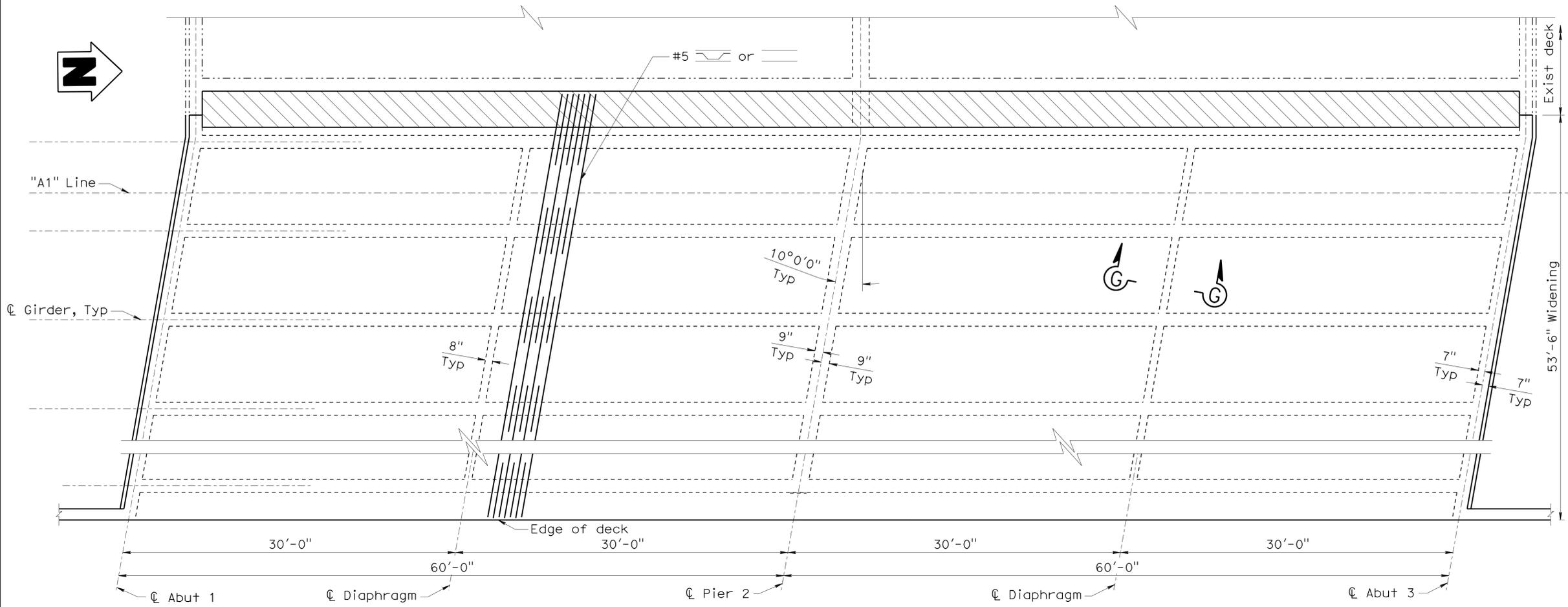
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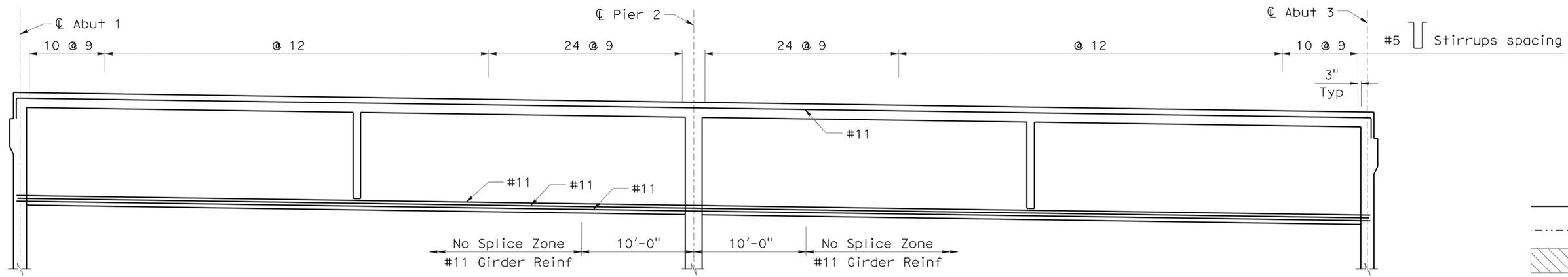
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 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831

REGISTERED PROFESSIONAL ENGINEER
 XIANGYANG FU
 No. C 72514
 Exp. 06/30/16
 CIVIL
 STATE OF CALIFORNIA



PLAN

Scale: $\frac{3}{16}" = 1'-0"$



LONGITUDINAL SECTION

Scale H: $\frac{3}{16}" = 1'-0"$
 V: $\frac{3}{8}" = 1'-0"$

LEGEND

- Indicates New Construction
- - - - Indicates Exist Structure
- ▨ Indicates Closure Pour

NOTE:

For Section G-G, see "CIDH CONCRETE PILE DETAILS" sheet.

Note:
 The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
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PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO. 33-0710
 POST MILES 24.8

ARROYO DEL VALLE BRIDGE (WIDEN)
GIRDER LAYOUT

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:42

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	756	814

Xiangyang Fu 01/16/15
REGISTERED CIVIL ENGINEER DATE

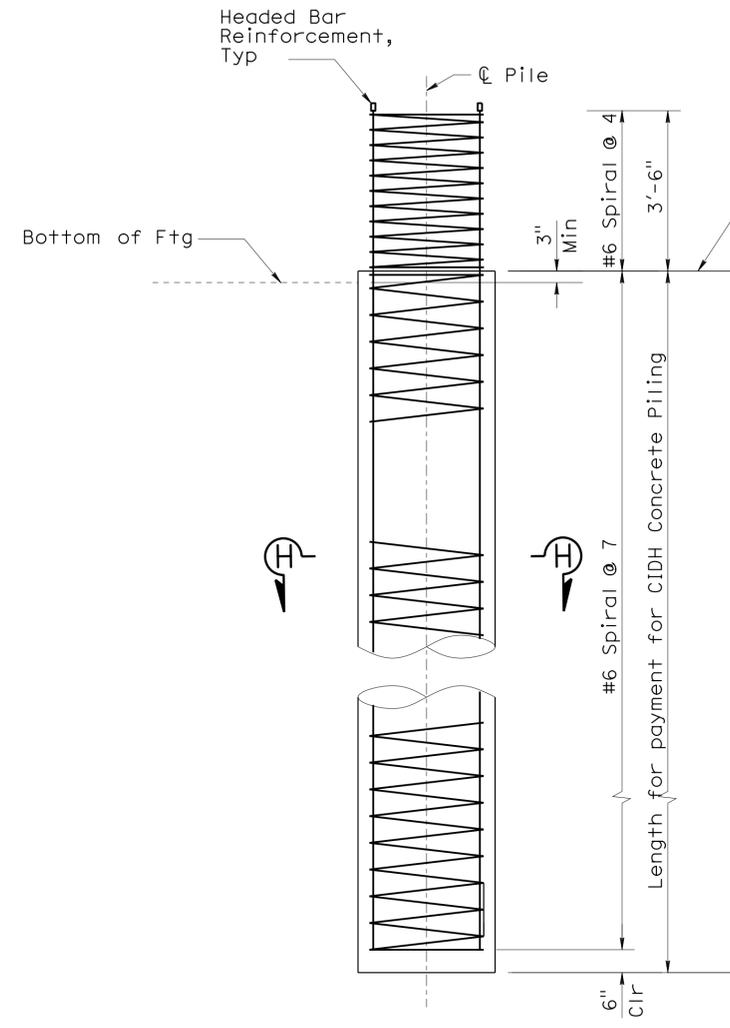
2-23-15
PLANS APPROVAL DATE

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XIANGYANG FU
No. C 72514
Exp. 06/30/16
CIVIL
STATE OF CALIFORNIA

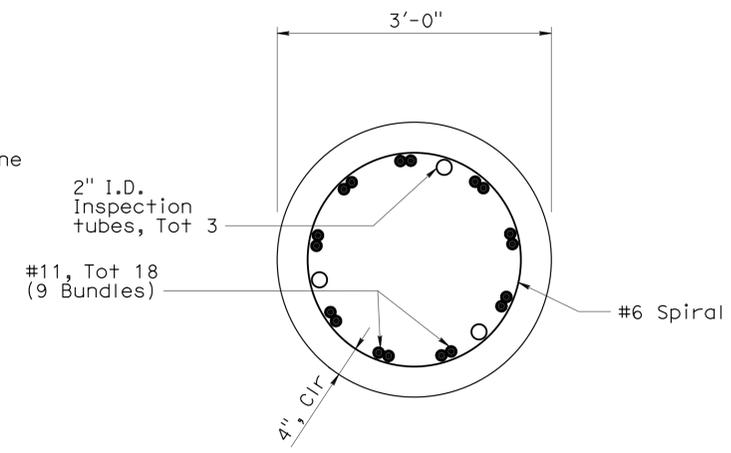
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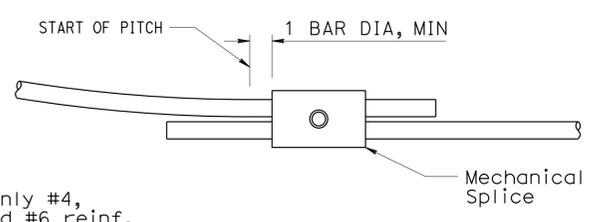
MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



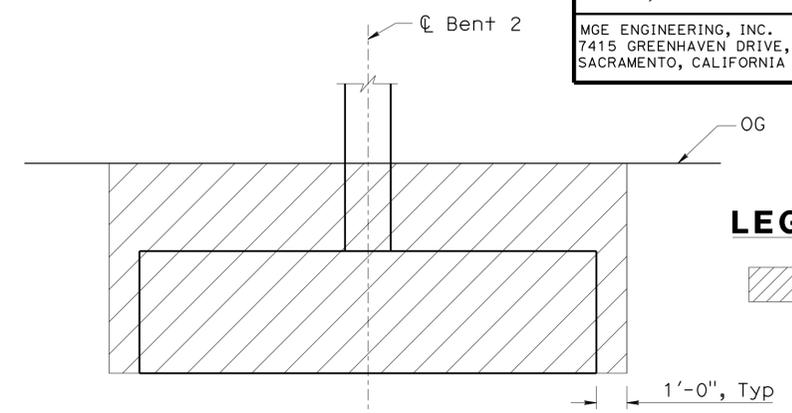
ELEVATION
Scale: 1/2" = 1'-0"



SECTION H-H
Scale: 1" = 1'-0"

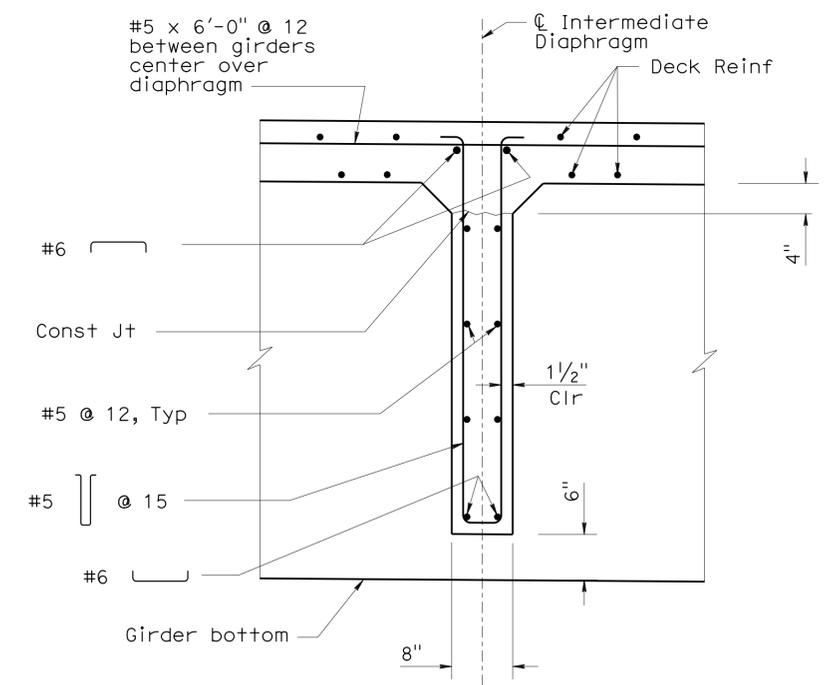


SPIRAL SPLICE DETAIL
No Scale



LIMITS OF PAYMENT FOR EXCAVATION AT BENT
No Scale

LEGEND
 Indicates structure excavation (Type D)



SECTION G-G
Scale: 1" = 1'-0"

NOTE:
For location of Section G-G, see "GIRDER LAYOUT" sheet.

Note:
The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

David Soon
DESIGN OVERSIGHT
2-23-15
SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
PROJECT ENGINEER

BRIDGE NO. 33-0710
POST MILES 24.8

ARROYO DEL VALLE BRIDGE (WIDEN)
CIDH CONCRETE PILE DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0733
PROJECT NUMBER & PHASE: 04000205811
CONTRACT NO.: 04-297624

REVISION DATES	SHEET	OF
10/21/10 05/29/14 11/27/14 01/16/15	14	20

FILE => 33-0710-p-pd#01.dgn

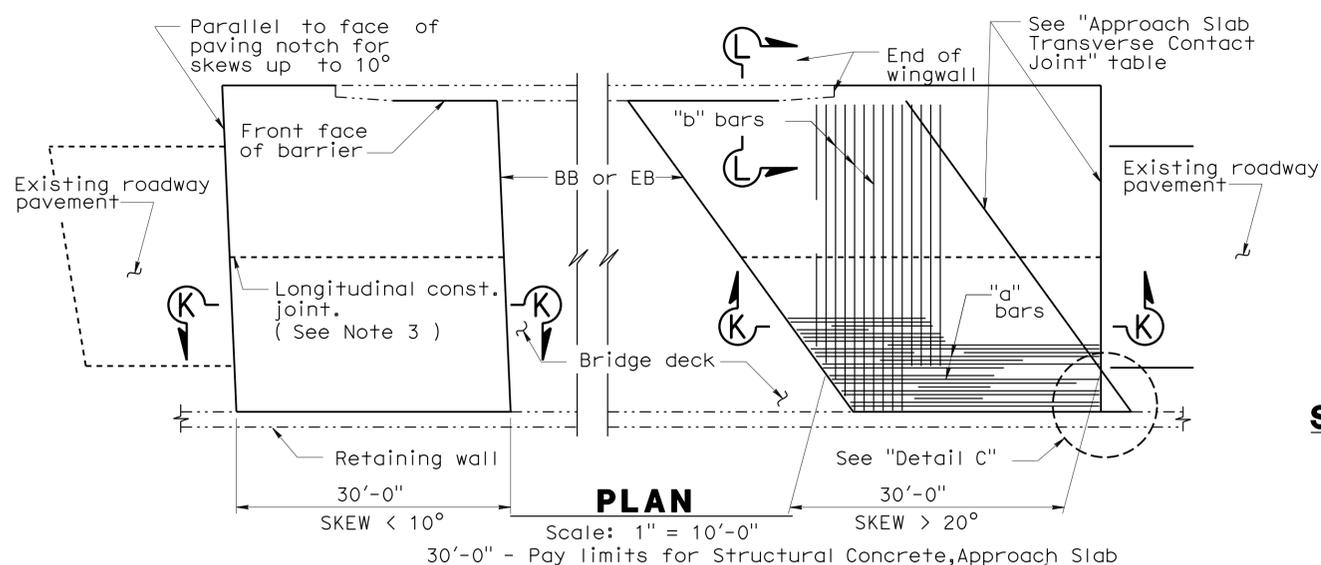
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	758	814

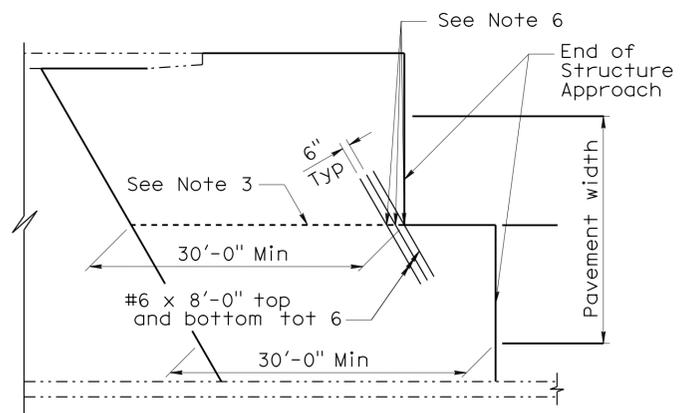
Xiangyang Fu 01/16/15
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 2-23-15
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 OAKLAND, CA 94607

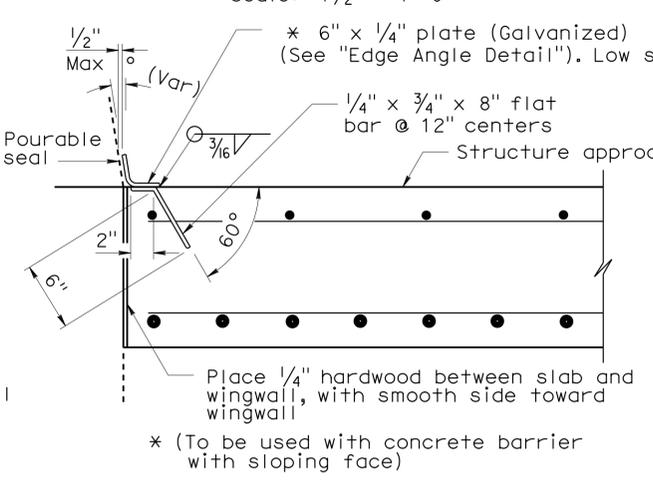
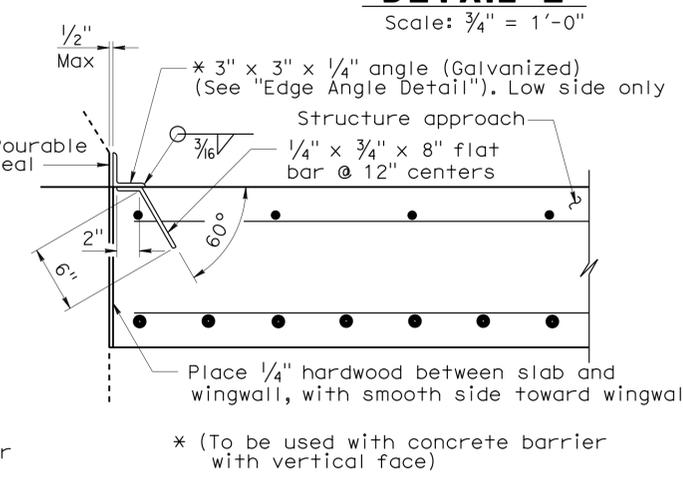
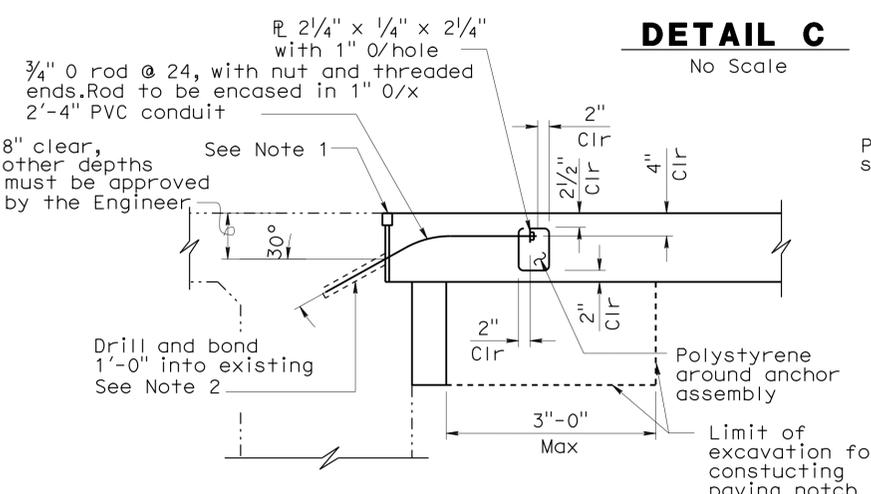
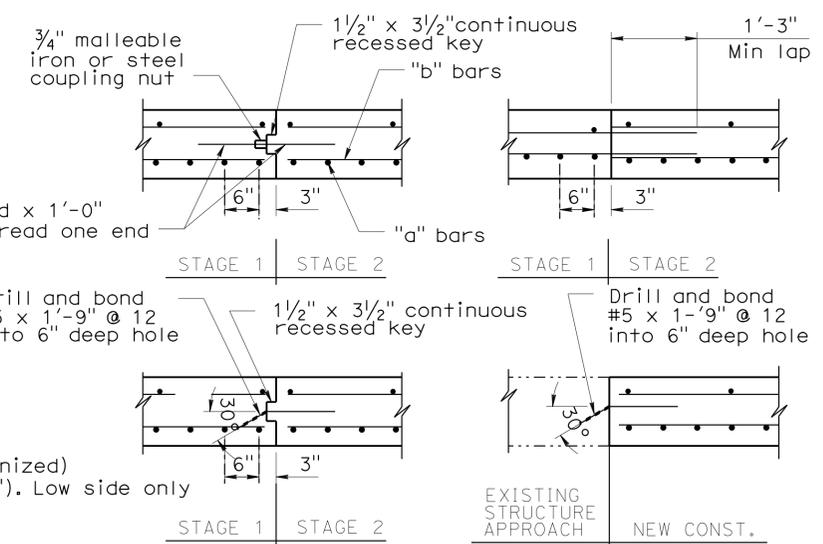
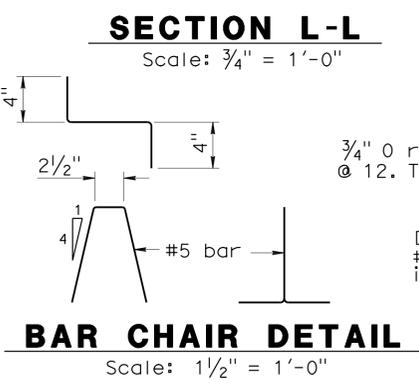
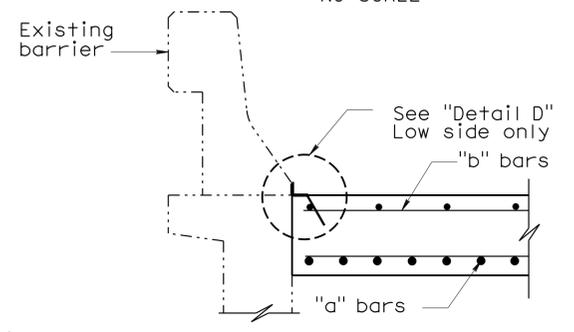
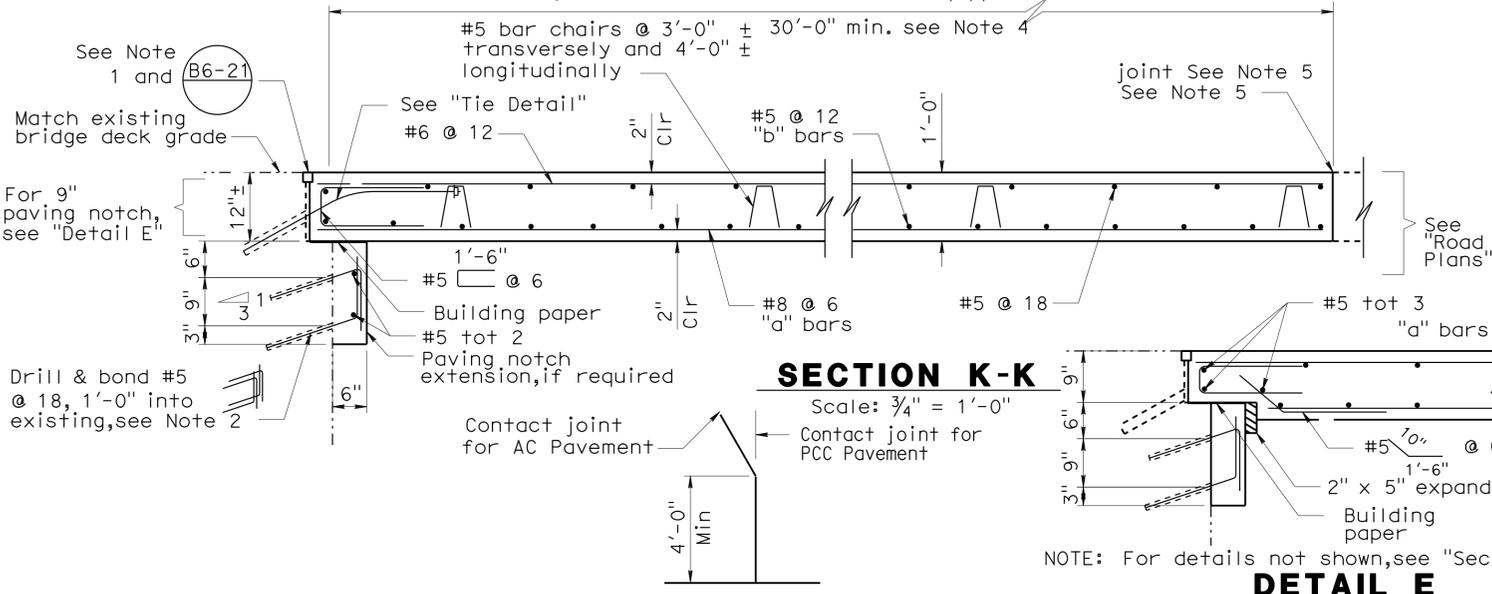
MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831



STRUCTURE APPROACH - END STAGGER DETAIL



APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	Parallel to face of paving notch	Parallel to face of paving notch
10° - 45°	Parallel to face of P N use (Detail A)	Stagger lines 24' to 36' apart
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line



TIE DETAIL
Scale: 3/4" = 1'-0"

Note: The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

- NOTES:**
- For details not noted or shown, see Structure Plans
 - For drainage details, see "STRUCTURE APPROACH DRAINAGE DETAILS" sheet
 - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines
 - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach, as applicable
 - For transverse contact joint with new PCC paving, refer to Standard Plan P10
 - At the contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along \perp roadway

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO. 33-0710
 POST MILES 24.8
ARROYO DEL VALLE BRIDGE (WIDEN)
STRUCTURE APPROACH TYPE R(30D)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	759	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

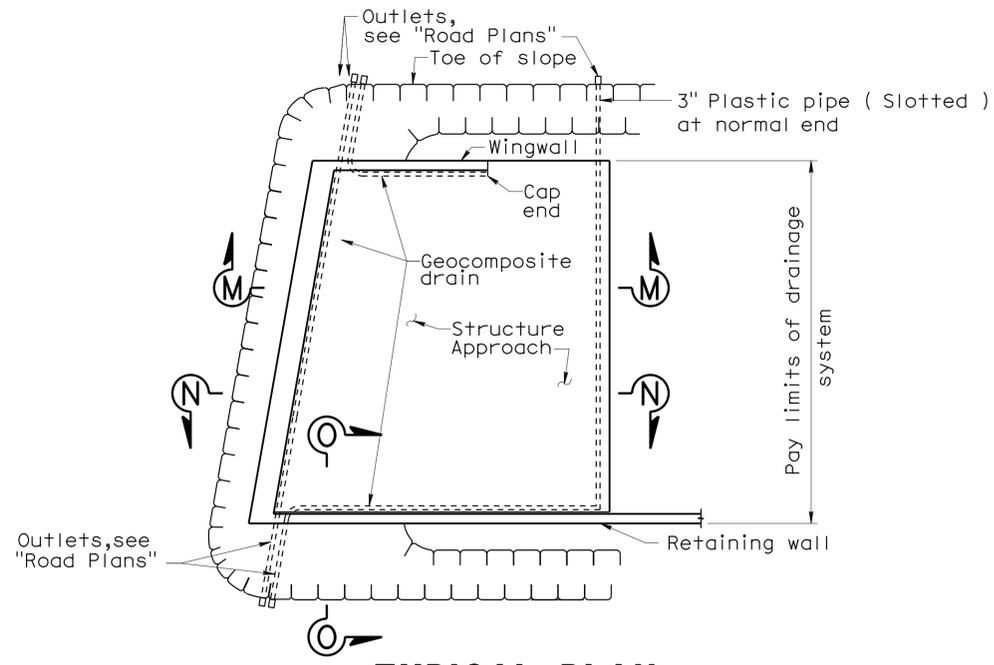
2-23-15
 PLANS APPROVAL DATE

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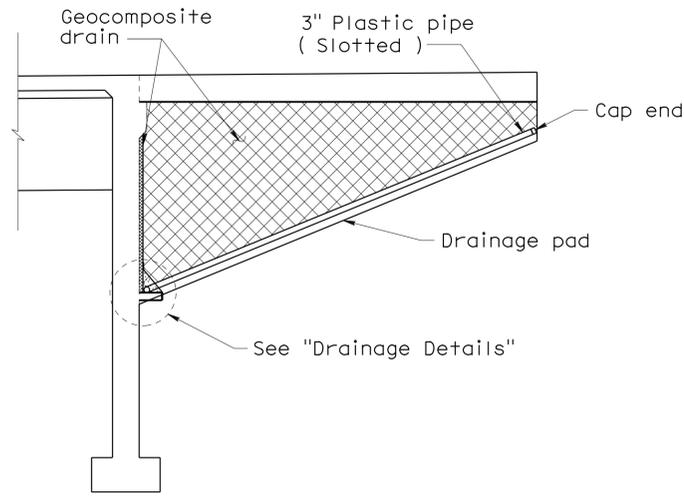
ALAMEDA COUNTY TRANSPORTATION COMMISSION
 1111 BROADWAY, SUITE 800
 OAKLAND, CA 94607

MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831

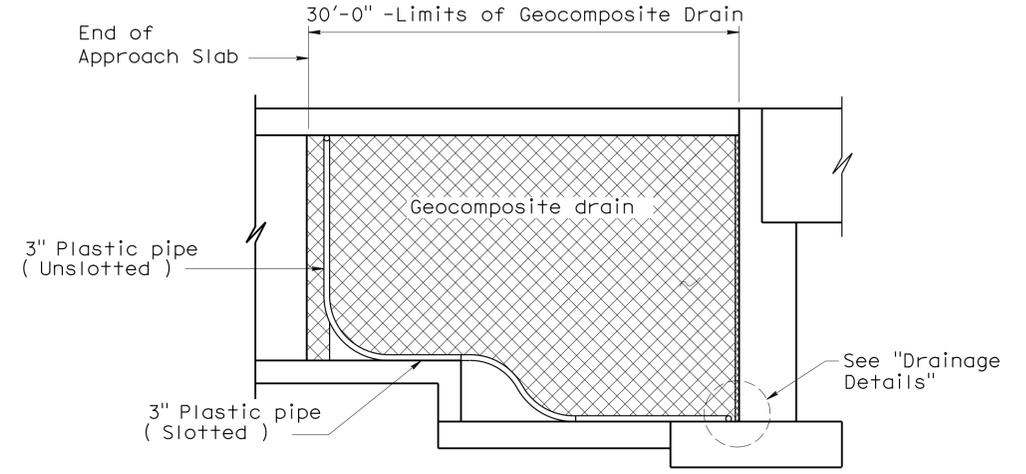


TYPICAL PLAN
 1"=10'

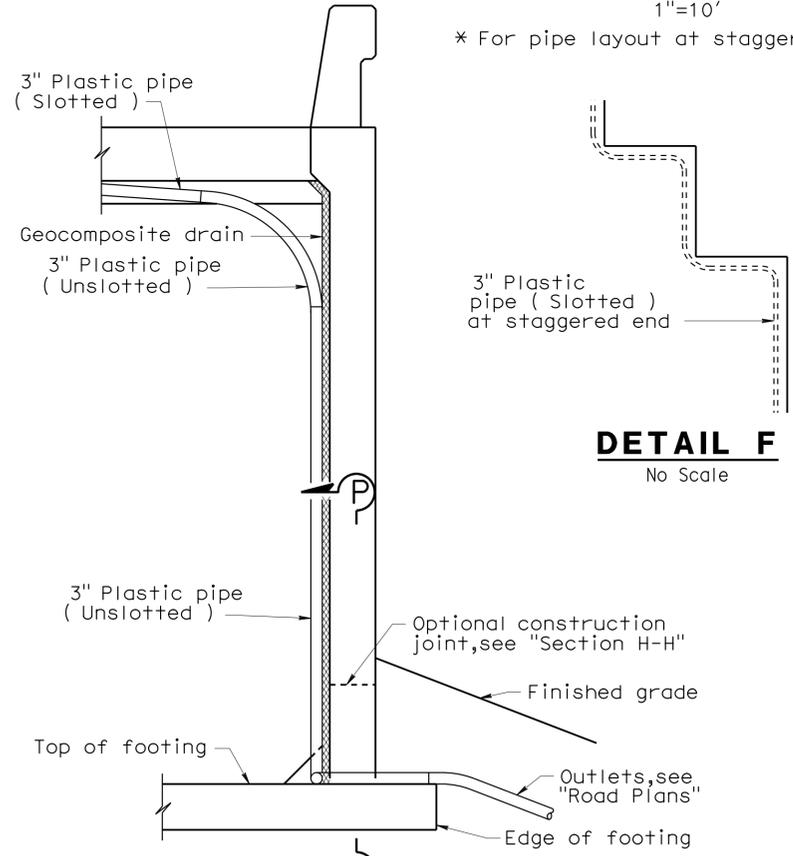
* For pipe layout at staggered end, see "Detail F".



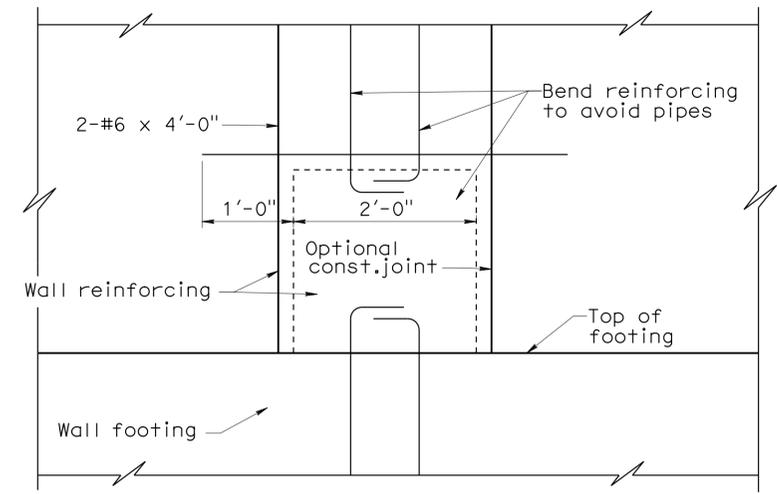
CANTILEVER WINGWALL SECTION M-M
 1/4"=1'-0"



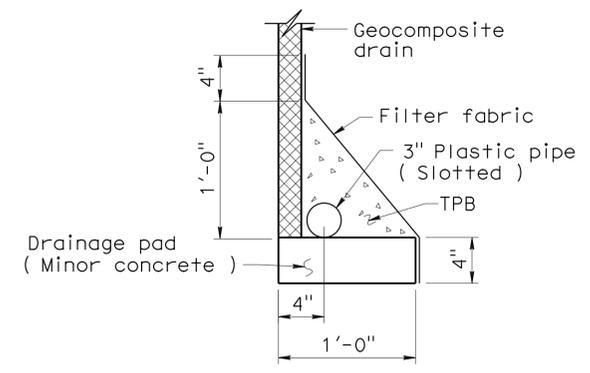
RETAINING WALL WINGWALL SECTION N-N
 1/4"=1'-0"



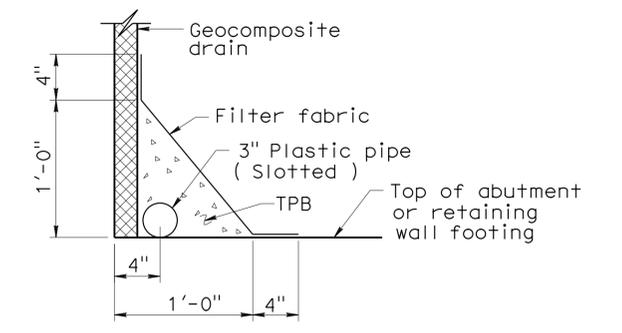
DETAIL F
 No Scale



SECTION P-P
 1"=1'-0"



WITHOUT FOOTING



WITH FOOTING

DRAINAGE DETAILS

1/2"=1'-0"

Note:
 The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

SECTION O-O
 1/2"=1'-0"

DESIGN OVERSIGHT
 David Soon
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO.	33-0710
POST MILES	24.8

**ARROYO DEL VALLE BRIDGE (WIDEN)
 STRUCTURE APPROACH DRAINAGE DETAILS**

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:42

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	760	814

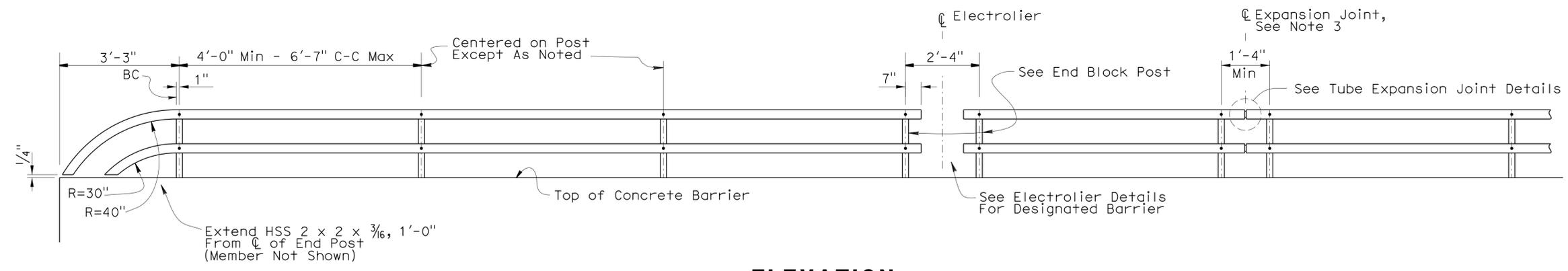
Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

2-23-15
 PLANS APPROVAL DATE

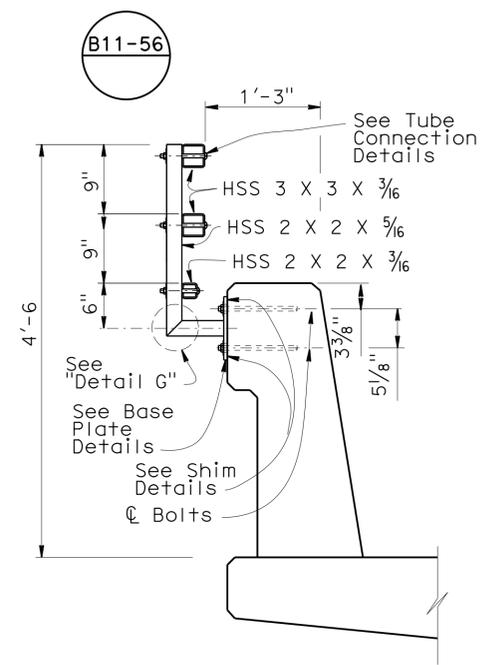
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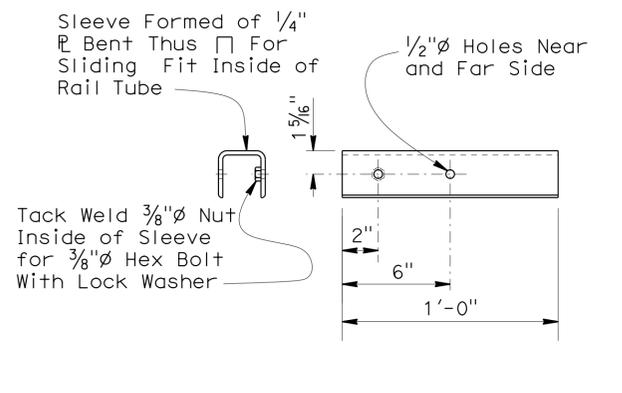
MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831



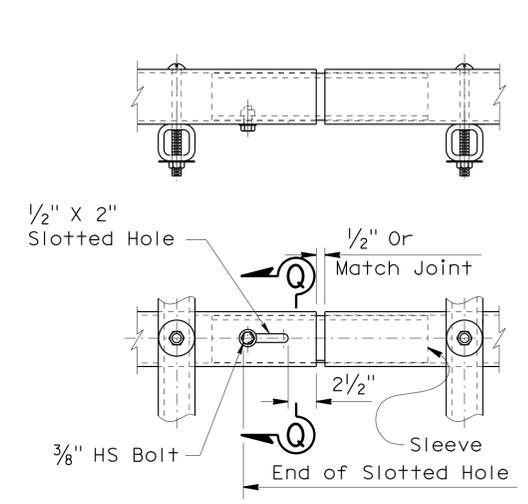
ELEVATION
 NO SCALE



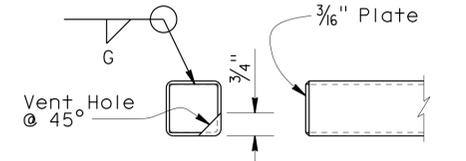
TYPE 736
 1/8" = 1'-0"



SLEEVE DETAIL
 NO SCALE



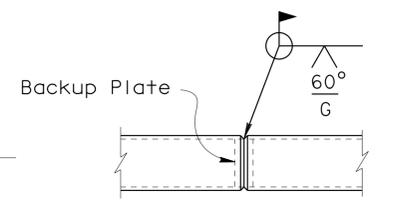
TUBE EXPANSION JOINT DETAILS
 NO SCALE



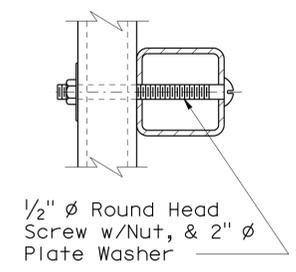
RAIL CAP DETAIL
 NO SCALE



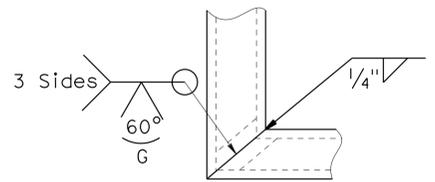
SECTION Q-Q
 NO SCALE



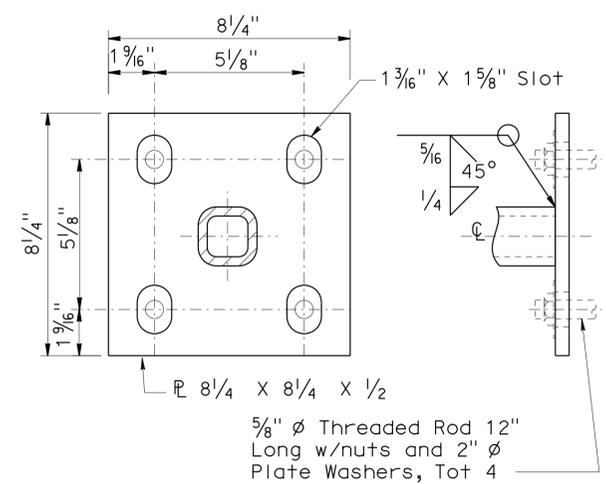
WELDED SPLICE DETAIL
 NO SCALE



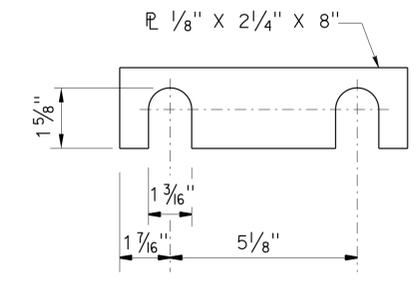
TUBE CONNECTION DETAIL
 NO SCALE



DETAIL G
 NO SCALE



BASE PLATE DETAIL
 NO SCALE



SHIM DETAILS
 NO SCALE

- Notes:**
1. Post must be normal to railing.
 2. Rail tubes must be shop bent or fabricated to fit horizontal curve when radius is less than 950'.
 3. Tube expansion joints must be located in the tubes spanning deck or wall joints. Increase joint width in tubes to match expansion joint width and increase sleeve length correspondingly.
 4. Top rail tube must be continuous over not less than two posts except a short post spacing is permitted near deck or wall joints, electroliers, or other rail discontinuities as noted.
 5. See Project Plans for limits of tubular bicycle railing.

Note:
 The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

DESIGN OVERSIGHT **David Soon**
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO.	33-0710	ARROYO DEL VALLE BRIDGE (WIDEN)
POST MILES	24.8	

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:42

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	761	814

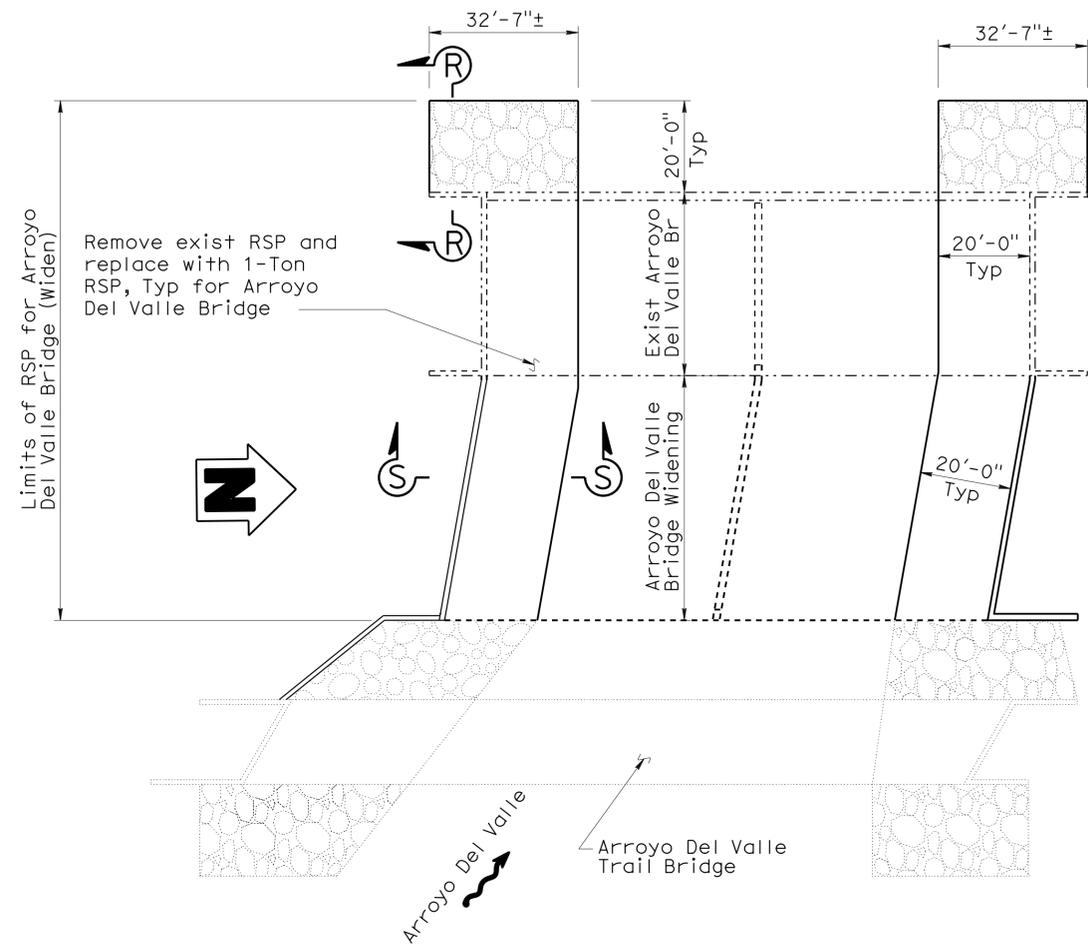
Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

2-23-15
 PLANS APPROVAL DATE

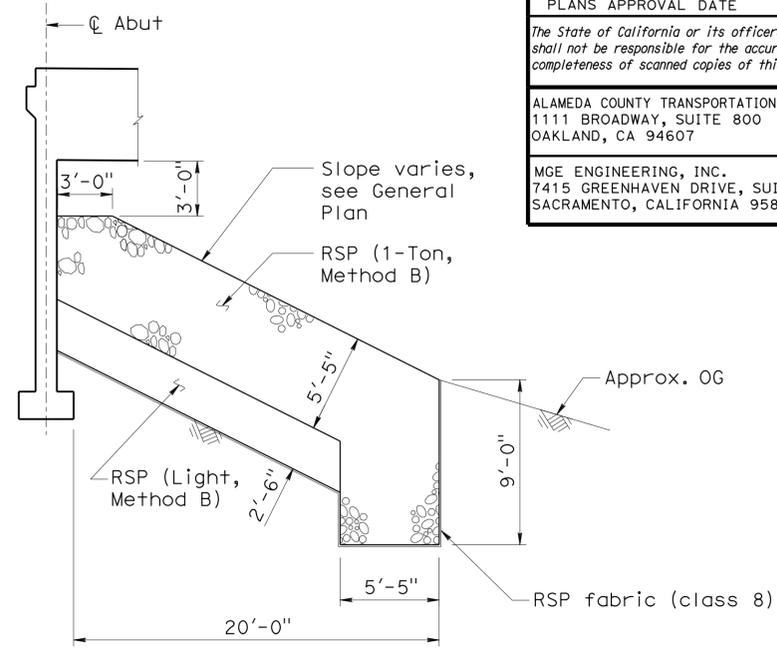
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 1111 BROADWAY, SUITE 800
 OAKLAND, CA 94607

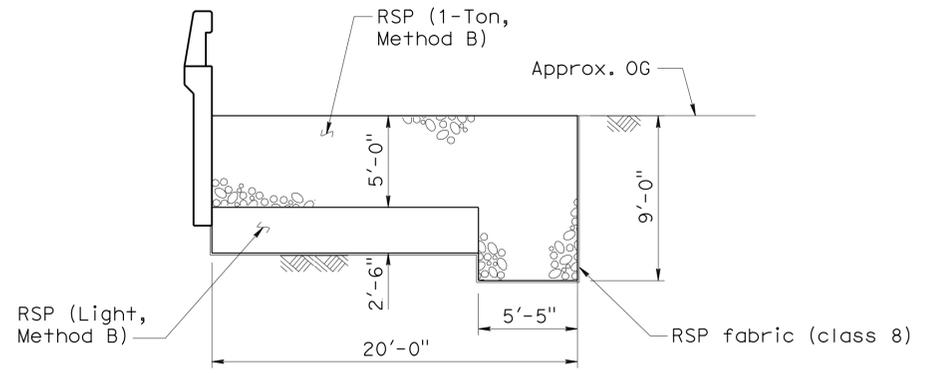
MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831



PLAN - LIMITS OF RSP
 Scale: 1" = 20'-0"



SECTION S-S
 Scale: 1" = 5'-0"



SECTION R-R
 Scale: 1" = 5'-0"

Note:
 The Contractor must verify all controlling field dimensions before ordering or fabricating any material.

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO. 33-0710
 POST MILES 24.8

ARROYO DEL VALLE BRIDGE (WIDEN)
ROCK SLOPE PROTECTION

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811 CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10/21/10 05/29/14 11/27/14 01/16/15	19	20

FILE => 33-0710-u-rk01.dgn

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:42

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	762	814

01/16/15
DATE

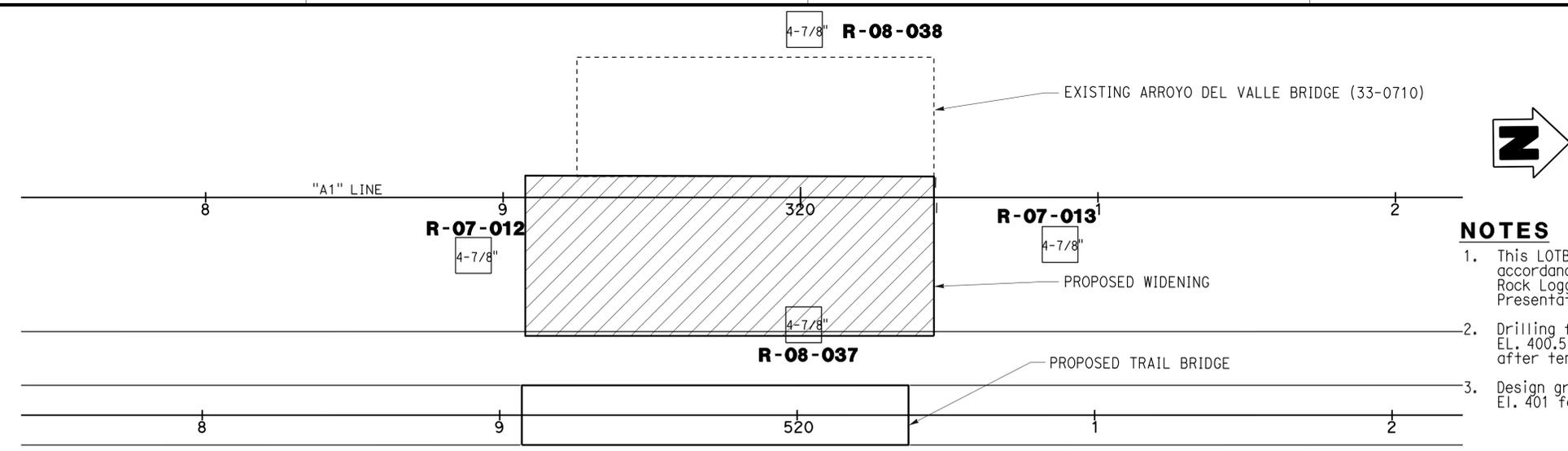
2-23-15
PLANS APPROVAL DATE

Stephen Huang
No. C 42289
Exp. 3-31-16
STATE OF CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER
GEOTECHNICAL

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URS CORPORATION
1333 BROADWAY, SUITE 800
OAKLAND, CA 94612

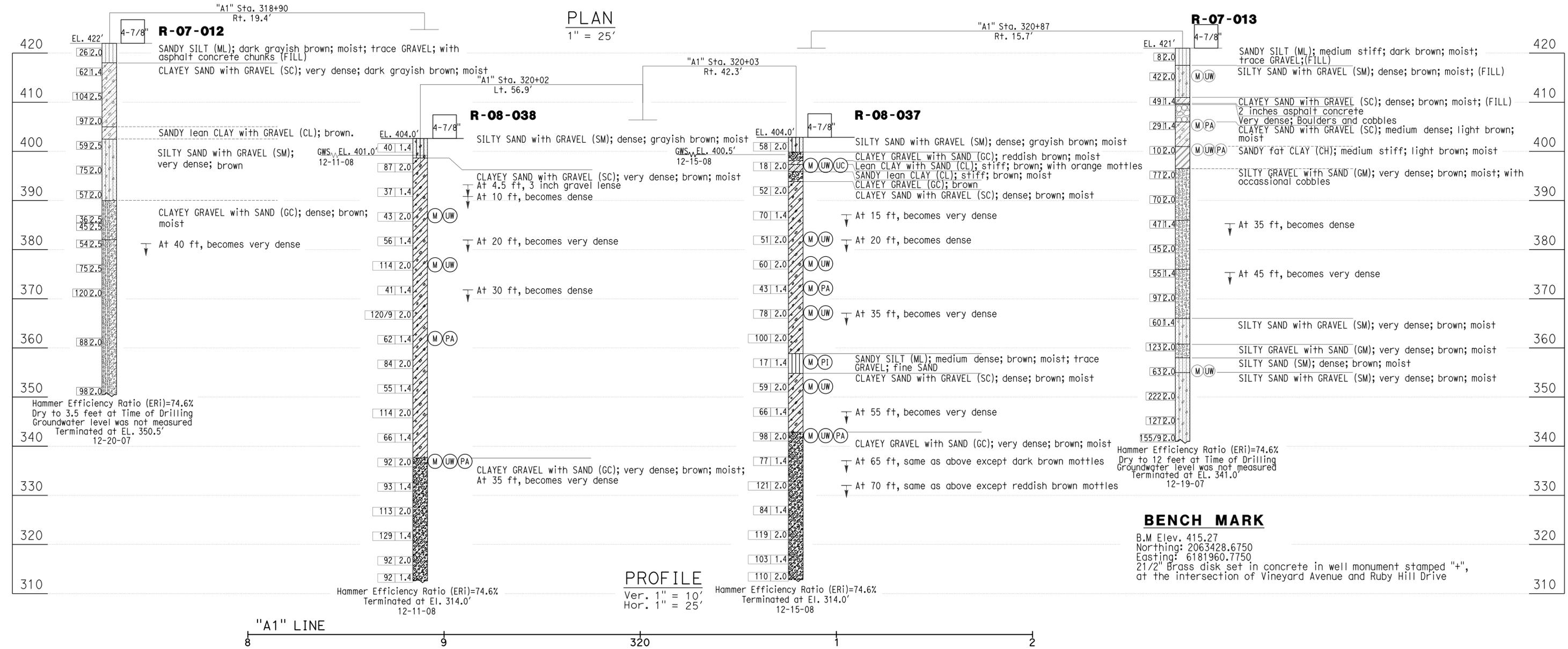
ALAMEDA COUNTY TRANSPORTATION COMMISSION
1111 BROADWAY, SUITE 800
OAKLAND, CA 94607



NOTES

1. This LOTB sheet was prepared in accordance with the Caltrans Soil and Rock Logging, Classification, and Presentation Manual (JUNE 2007)
2. Drilling fluid was measured at EL. 400.5 feet in NB37, 2 days after temporarily stopped drilling.
3. Design groundwater level at EL. 401 feet.

PLAN
1" = 25'



BENCH MARK

B.M Elev. 415.27
Northing: 2063428.6750
Easting: 6181960.7750
21/2" Brass disk set in concrete in well monument stamped "+", at the intersection of Vineyard Avenue and Ruby Hill Drive

PROFILE
Ver. 1" = 10'
Hor. 1" = 25'

DESIGN OVERSIGHT
David Soon
2-23-15
SIGN OFF DATE

DRAWN BY: A. Cheung
CHECKED BY: A. M. Moore

C. Rambo
FIELD INVESTIGATION BY:
DATE: Dec 2007-Dec 2008

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Stephen Huang
PROJECT ENGINEER

BRIDGE NO.
33-0710
POST MILES
24.8

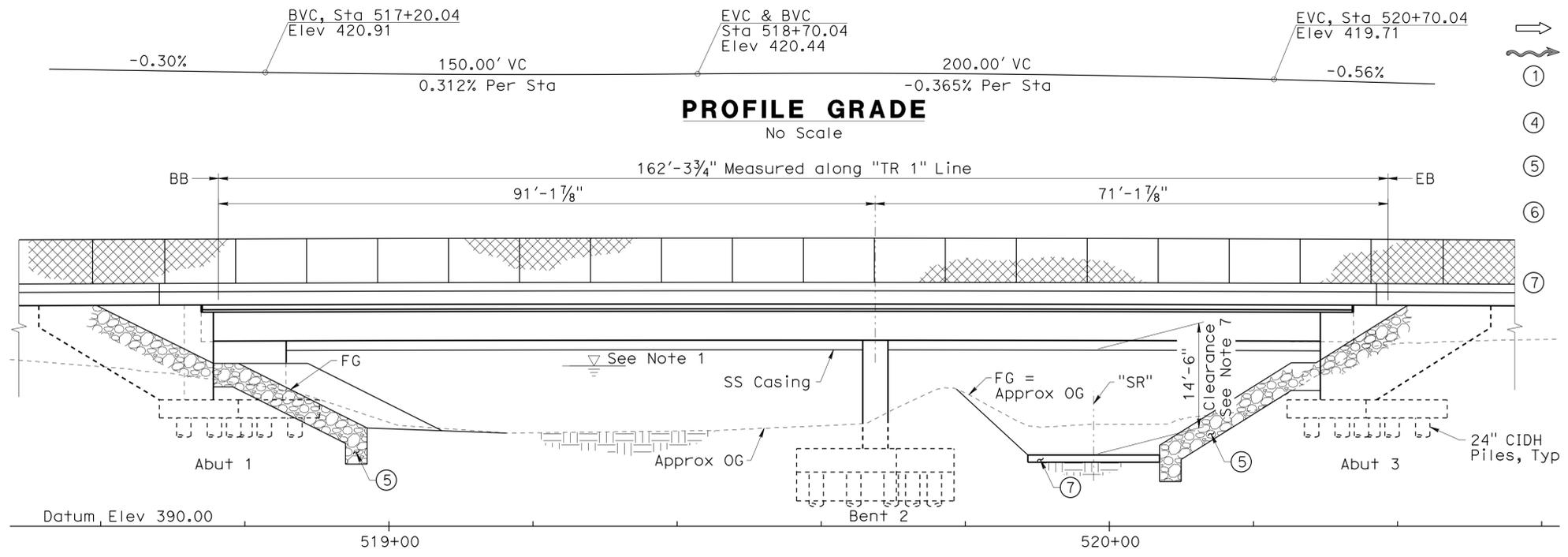
ARROYO DEL VALLE BRIDGE (WIDEN)
LOG OF TEST BORINGS

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	763	814

Xiangyang Fu 01/16/15	
REGISTERED CIVIL ENGINEER	DATE
2-23-15	
PLANS APPROVAL DATE	
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ALAMEDA COUNTY TRANSPORTATION COMMISSION 1111 BROADWAY, SUITE 800 OAKLAND, CA 94607	
MGE ENGINEERING, INC. 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CALIFORNIA 95831	

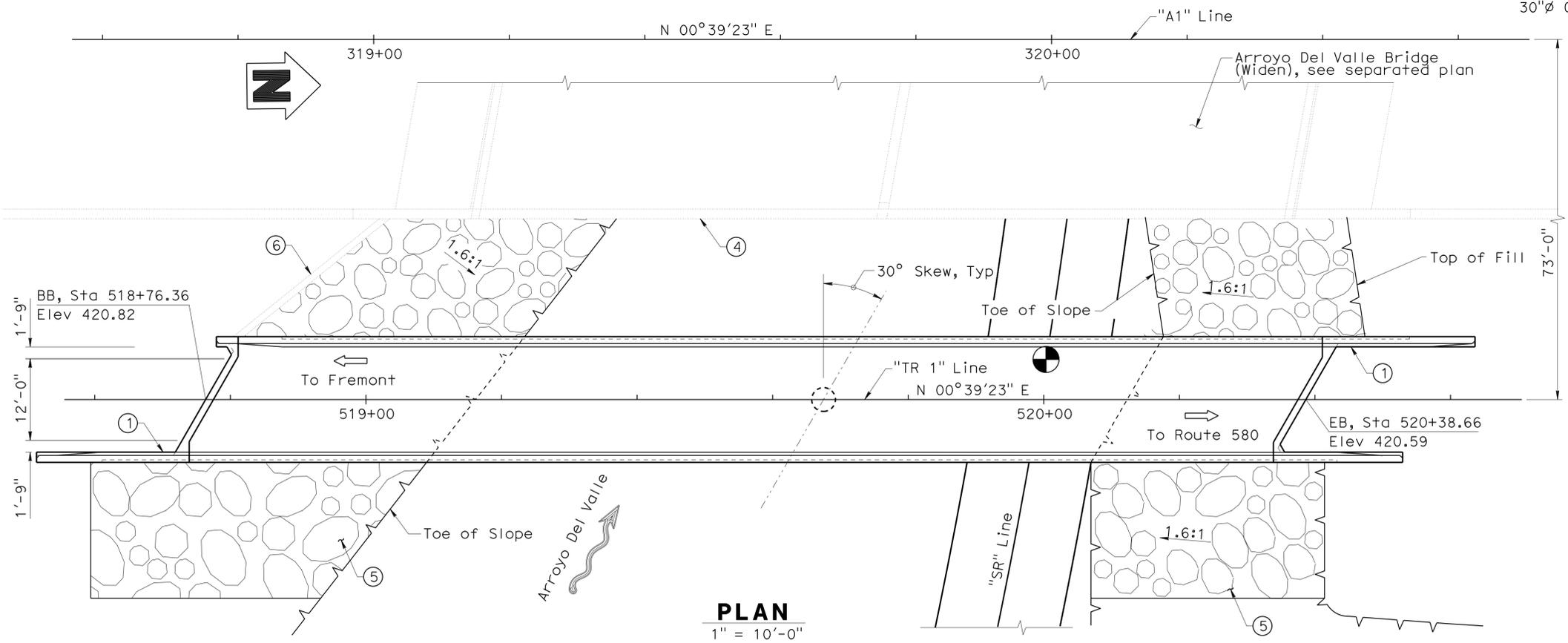
LEGEND

- ➔ Indicates Direction of Travel
- ➔ Indicates Direction of Flow
- ① Paint "Arroyo Del Valle Trail Bridge"
- ④ Arroyo Del Valle Bridge (Widen) Bridge No. 33-0710
- ⑤ Rock Slope Protection, See "ROCK SLOPE PROTECTION" SHEET
- ⑥ Type 1 Retaining Wall, see "Arroyo Del Valle Bridge (Widen)" plans
- ⑦ "SR" Road, see "Roadway Plans"

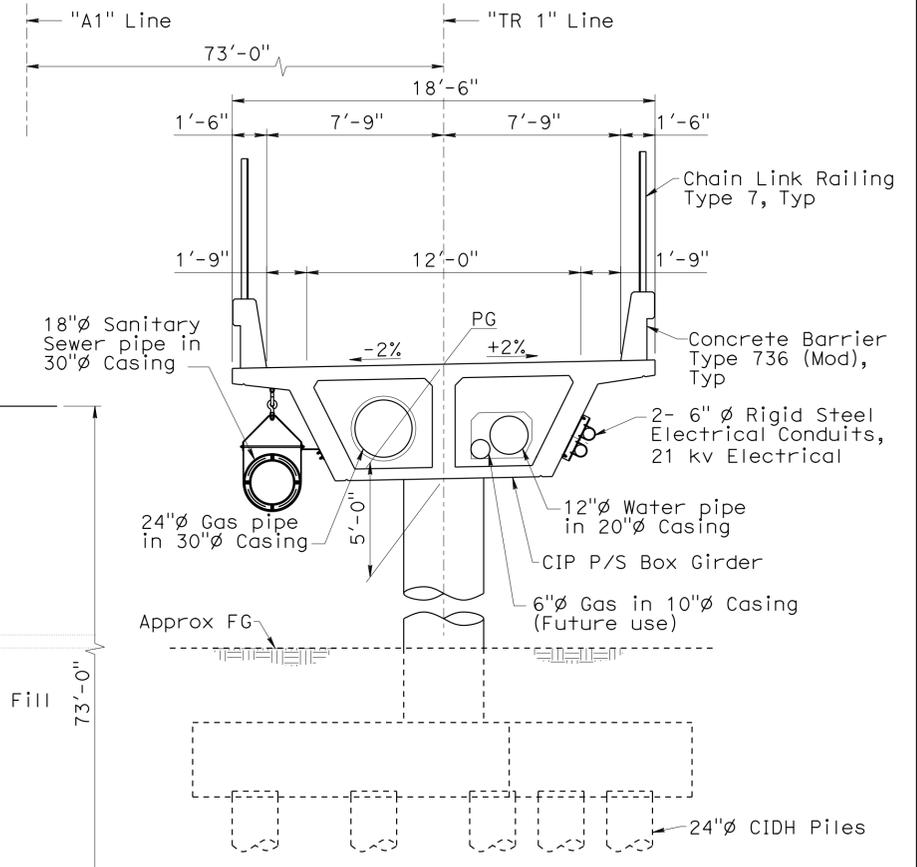


PROFILE GRADE
No Scale

ELEVATION
1" = 10'-0"



PLAN
1" = 10'-0"



TYPICAL SECTION
1/4" = 1'-0"

- NOTES:
- For General Notes, Quantities, Pile Data Table and Hydrologic Summary, see "FOUNDATION PLAN" sheet.
 - For Index to Plans, see "DECK CONTOURS" sheet.
 - For alignment and details of Sanitary Sewer, see "Sanitary Sewer Plan", SSD-4.
 - For alignment and details of Water pipe, see "Utility Plan", U-23.
 - For alignment and detail of Gas pipes and Electrical Conduits, see "Joint Utility Trench" sheets.
 - For utility Hanger Details not Shown, See "BRIDGE UTILITY DETAILS" Sheet.
 - 14'-6" vertical clearance is measured from the bottom of SS casing to the finished grade of "SR" roadway.

DESIGN OVERSIGHT
David Soon
2-23-15
SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 AND PERMIT DESIGN VEHICLE	
LAYOUT	BY X. Fu	CHECKED D. Wang
SPECIFICATIONS	BY R. E. Sennett	PLANS AND SPECS COMPARED X. Fu

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
PROJECT ENGINEER

BRIDGE NO.	N/A	ARROYO DEL VALLE TRAIL BRIDGE
POST MILES	N/A	
		GENERAL PLAN

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	764	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

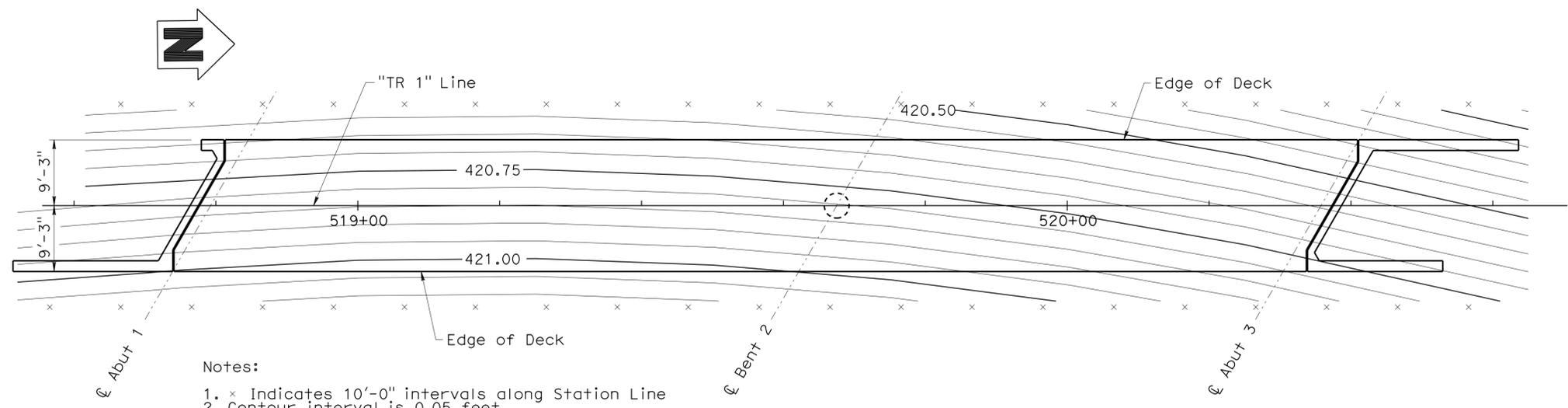
2-23-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 XIANGYANG FU
 No. C 72514
 Exp. 06/30/16
 CIVIL
 STATE OF CALIFORNIA

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 OAKLAND, CA 94607

MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831

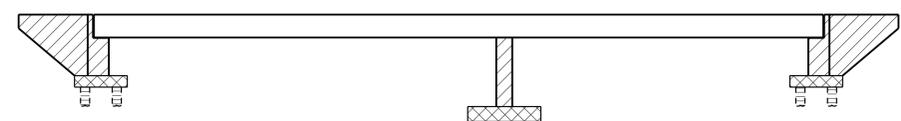


- Notes:
1. x Indicates 10'-0" intervals along Station Line
 2. Contour interval is 0.05 feet.
 3. Contours do not include camber.

DECK CONTOURS
 Scale: 1" = 10'

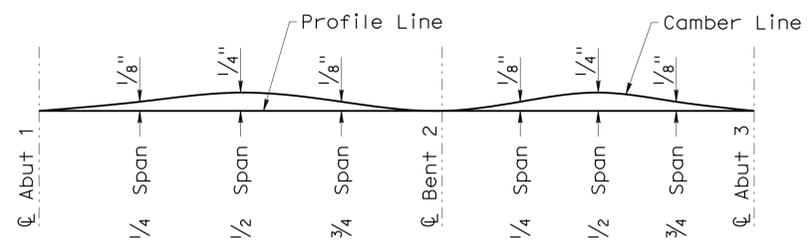
INDEX TO PLANS

Sheet No.	Title
1	GENERAL PLAN
2	DECK CONTOURS
3	FOUNDATION PLAN
4	ABUTMENT LAYOUT NO. 1
5	ABUTMENT LAYOUT NO. 2
6	ABUTMENT DETAILS NO. 1
7	ABUTMENT DETAILS NO. 2
8	ABUTMENT DETAILS NO. 3
9	BENT LAYOUT
10	BENT DETAILS NO. 1
11	BENT DETAILS NO. 2
12	TYPICAL SECTION
13	GIRDER LAYOUT
14	BRIDGE UTILITY DETAILS
15	GIRDER REINFORCEMENT
16	MISCELLANEOUS DETAILS NO. 1
17	MISCELLANEOUS DETAILS NO. 2
18	ROCK SLOPE PROTECTION
19	LOG OF TEST BORINGS



- Structural concrete, Bridge (4000 psi @ 28 days)
- Structural concrete, Bridge
- Structural concrete, Bridge Footing
- Seal Course Concrete
- CIDH Concrete Pile (4000 psi @ 28 Days)

CONCRETE STRENGTH AND TYPE LIMITS
 No Scale

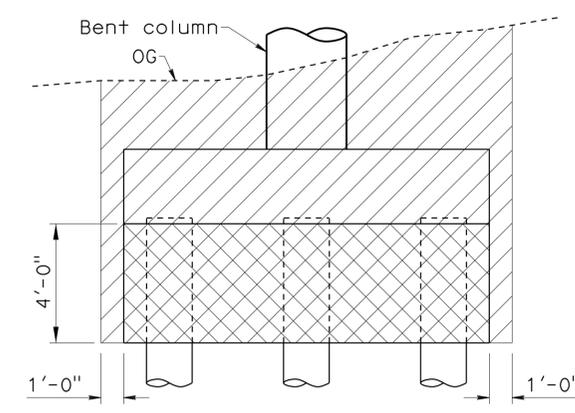
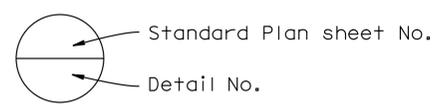


Note:
 Camber shown does not include allowance for falsework, settlement. Camber values are shown in inches.

CAMBER DIAGRAM
 No Scale

STANDARD PLANS

- Dated 2010
- A10A Abbreviations (Sheet 1 of 2)
 - A10B Abbreviations (Sheet 2 of 2)
 - A10C Lines and Symbols (Sheet 1 of 3)
 - A10D Lines and Symbols (Sheet 2 of 3)
 - A10E Lines and Symbols (Sheet 3 of 3)
 - A62C LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE
 - B0-1 BRIDGE DETAILS
 - B0-3 BRIDGE DETAILS
 - B0-5 BRIDGE DETAILS
 - B0-13 BRIDGE DETAILS
 - B2-3 16" AND 24" CAST-IN-DRILLED-HOLE CONCRETE PILE
 - B6-21 JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
 - B7-1 BOX GIRDER DETAILS
 - B7-10 UTILITY OPENING - BOX GIRDER
 - B7-11 UTILITY DETAILS
 - RSP B8-5 CAST-IN-PLACE PRESTRESSED GIRDER DETAILS
 - B11-52 CHAIN LINK RAILING TYPE 7
 - B11-56 CONCRETE BARRIER TYPE 736 (Mod)
 - RSP ES-09B ELECTRICAL SYSTEMS (ELECTRICAL DETAILS STRUCTURE INSTALLATIONS)



BENT EXCAVATION PAY LIMITS
 No Scale

- LEGEND**
- Indicates Structure Excavation (Type A)
 - Indicates Seal Course Concrete

David Soon
 DESIGN OVERSIGHT David Soon
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

ARROYO DEL VALLE TRAIL BRIDGE DECK CONTOURS

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	765	814

Xiangyang Fu 01/16/15
REGISTERED CIVIL ENGINEER DATE

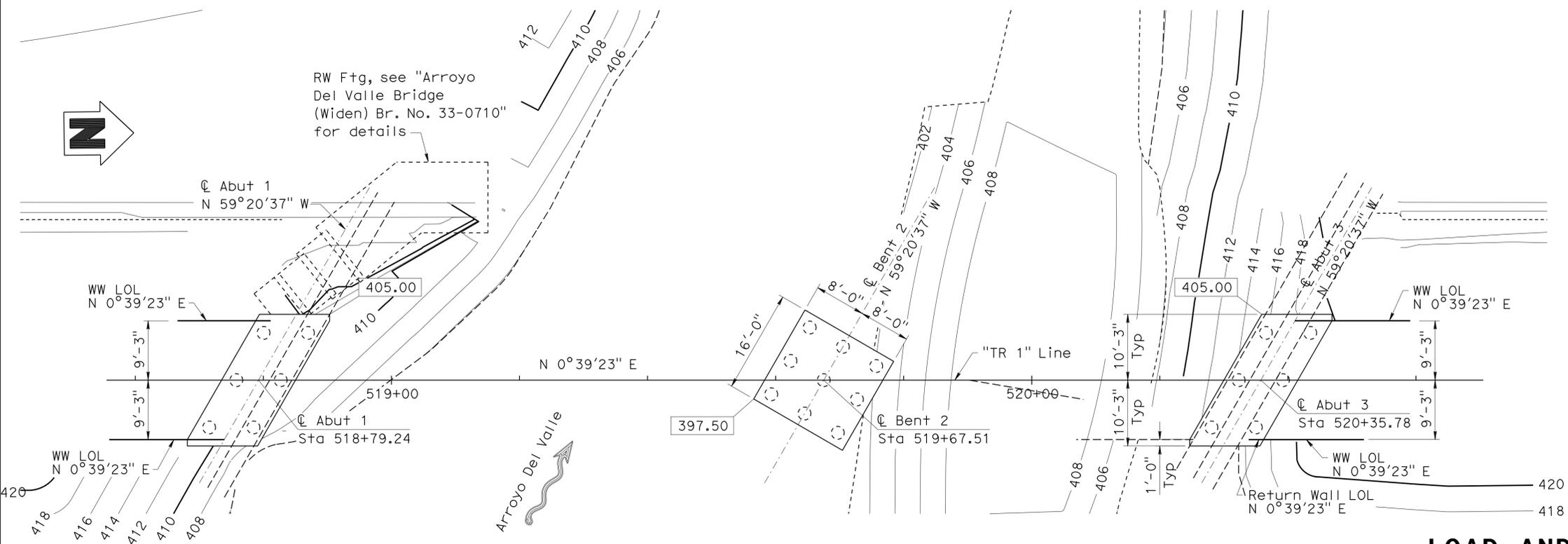
2-23-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
XIANGYANG FU
No. C 72514
Exp. 06/30/16
CIVIL
STATE OF CALIFORNIA

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1111 BROADWAY, SUITE 800
OAKLAND, CA 94607

MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



LEGEND

~> Indicates Direction of Flow

XXX.XX Indicates Bottom of Footing Elevation

○ Indicates 24" CIDH Piles

GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

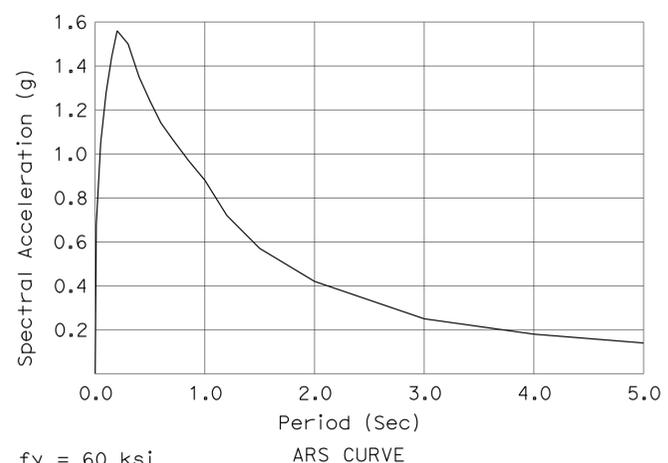
DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition and the Caltrans Amendments, Preface dated November 2011; except that Abutments and Concrete Barrier Type 736 are designed using Bridge Design Specifications '96 AASHTO w/ Revisions by Caltrans)

SEISMIC DESIGN: Caltrans Seismic Design Criteria (SDC) Version 1.7 dated April 2013

DEAD LOAD: Includes 35 psf for future wearing surface

LIVE LOADING: HL93 and Permit Design Vehicle

SEISMIC LOADING: Modified Caltrans SDC ARS Curve
Peak Ground Acceleration = 0.61g
Vs30 = 360 m/s



CONCRETE: fy = 60 ksi
fc = 3.6 ksi
n = 8
See "Prestressing Notes" on "GIRDER LAYOUT" sheet.

FOUNDATION PLAN
1" = 10'-0"

ARROYO DEL VALLE TRAIL BRIDGE
QUANTITIES

STRUCTURE EXCAVATION (BRIDGE)	266	CY
STRUCTURE EXCAVATION (TYPE A)	138	CY
STRUCTURE BACKFILL (BRIDGE)	150	CY
24" CAST-IN-DRILLED-HOLE CONCRETE PILING	900	LF
PRESTRESSING CAST-IN-PLACE CONCRETE	LUMP	SUM
SEAL COURSE CONCRETE	38	CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	74	CY
STRUCTURAL CONCRETE, BRIDGE	255	CY
JOINT SEAL (MR 1")	43	LF
BAR REINFORCING STEEL (BRIDGE)	78,136	LB
10" WELDED STEEL PIPE (.250" THICK)	210	LF
20" WELDED STEEL PIPE (0.250" THICK)	420	LF
30" WELDED STEEL PIPE (0.250" THICK)	210	LF
ROCK SLOPE PROTECTION (1/4 T, METHOD B) (CY)	540	CY
ROCK SLOPE PROTECTION (NO. 2, METHOD B)	173	CY
ROCK SLOPE PROTECTION FABRIC (CLASS 8)	614	SQYD
MISCELLANEOUS METAL (BRIDGE)	1,946	LB
CHAIN LINK RAILING (TYPE 7)	374	LF
CONCRETE BARRIER (TYPE 736 MODIFIED)	374	LF

BENCHMARK DATA

BM-16 - MONUMENT GTS220. MONUMENT IS A SET MAG NAIL IN DECORATIVE BRICK. MONUMENT IS LOCATED ON ISLAND AT NW RETURN OF ISABEL AND VINEYARD, 4.5 FT. FROM SE CORNER OF ISLAND,
ELEVATION: 425.51 NORTHING: 2062597.788
EASTING: 6183687.773

BM-17 - MONUMENT GTS219. MONUMENT IS A SET MAG NAIL WITH WASHER IN AC LABELED "GTS CONTROL POINT." MONUMENT IS LOCATED ON THE EAST SIDE OF ISABEL 60 FT NORTH OF BRIDGE ABUTMENT FOR CREEK NORTH OF VINEYARD, 2 FT NORTH OF END OF BARRIER RAIL.
ELEVATION: 421.73' NORTHING: 2063315.901
EASTING: 6183722.273

PILE DATA TABLE

B2-3

Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevations (ft)	Specified Tip Elevations (ft)
		Compression	Tension		
Abut 1	24" CIDH	320	0	359.0 (a)	359.0
				374.0 (c)	
Bent 2	24" CIDH	350	130	356.0 (a)	356.0
				371.0 (b)	
Abut 3	24" CIDH	290	0	365.0 (a)	365.0
				374.0 (c)	

Design tip elevation is controlled by the following demands:
(a) Compression, (b) Tension, (c) Lateral

HYDROLOGIC SUMMARY

Drainage Area 160 square miles

	Design Flood	Base Flood	Overtopping Flood/Flood of Record
Frequency (Years)	50	100	N/A
Discharge (Cubic feet per second)	5,400	7,000	N/A
Water Surface (Elevation at bridge)	410.55	411.71	N/A

Flood plain data are based upon information available when the plans were prepared and are shown to meet federal requirements. The accuracy of said information is not warranted by the State and interested or affected parties should make their own investigation.

Stephen Huang 01/16/15
REGISTERED PROFESSIONAL ENGINEER APPROVAL DATE

David Soon
DESIGN OVERSIGHT
David Soon
2-23-15
SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
PROJECT ENGINEER

ARROYO DEL VALLE TRAIL BRIDGE FOUNDATION PLAN

BRIDGE NO. N/A
POST MILES N/A

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	766	814

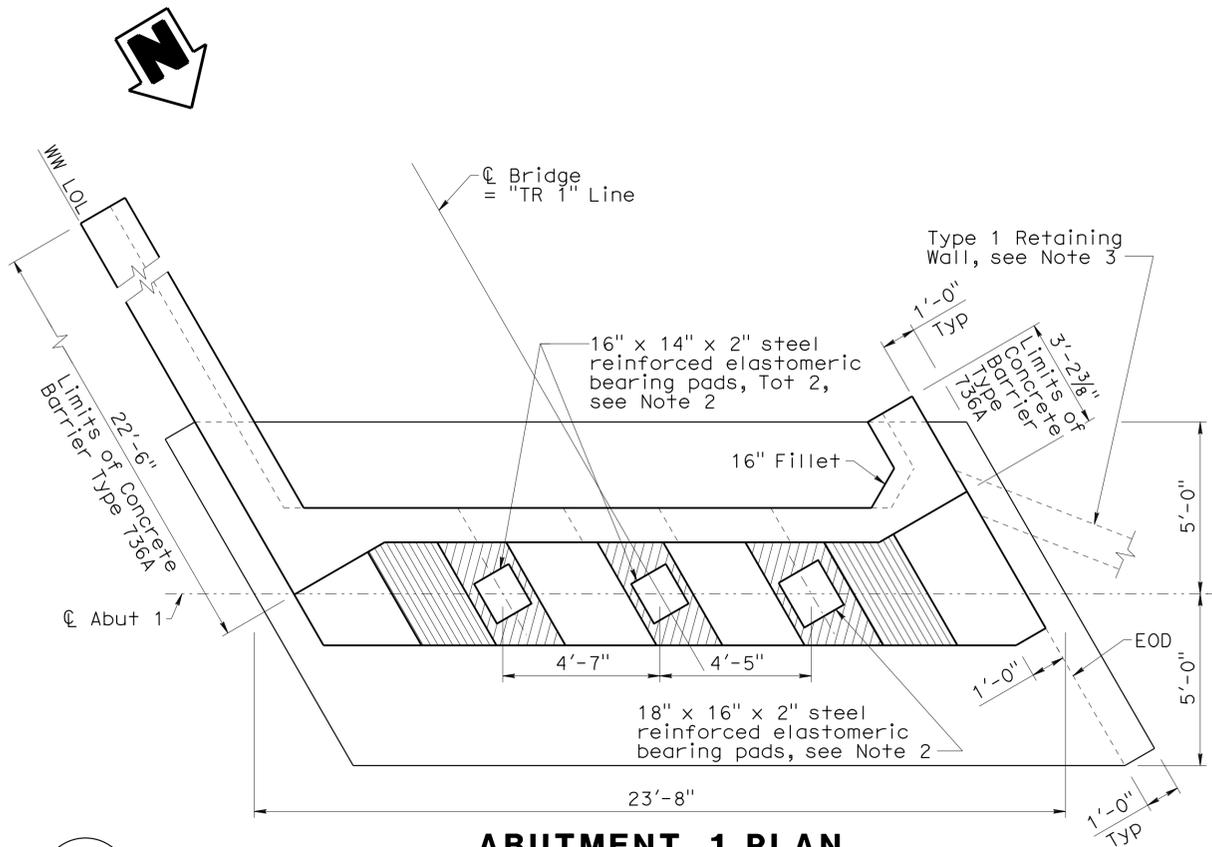
Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

2-23-15
 PLANS APPROVAL DATE

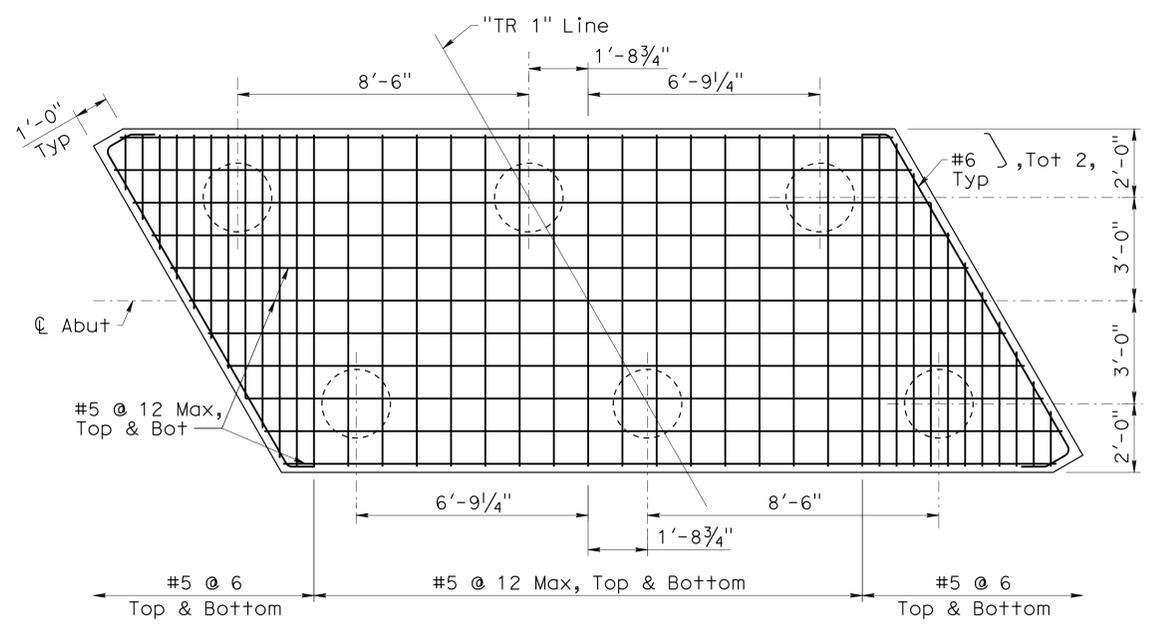
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MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831



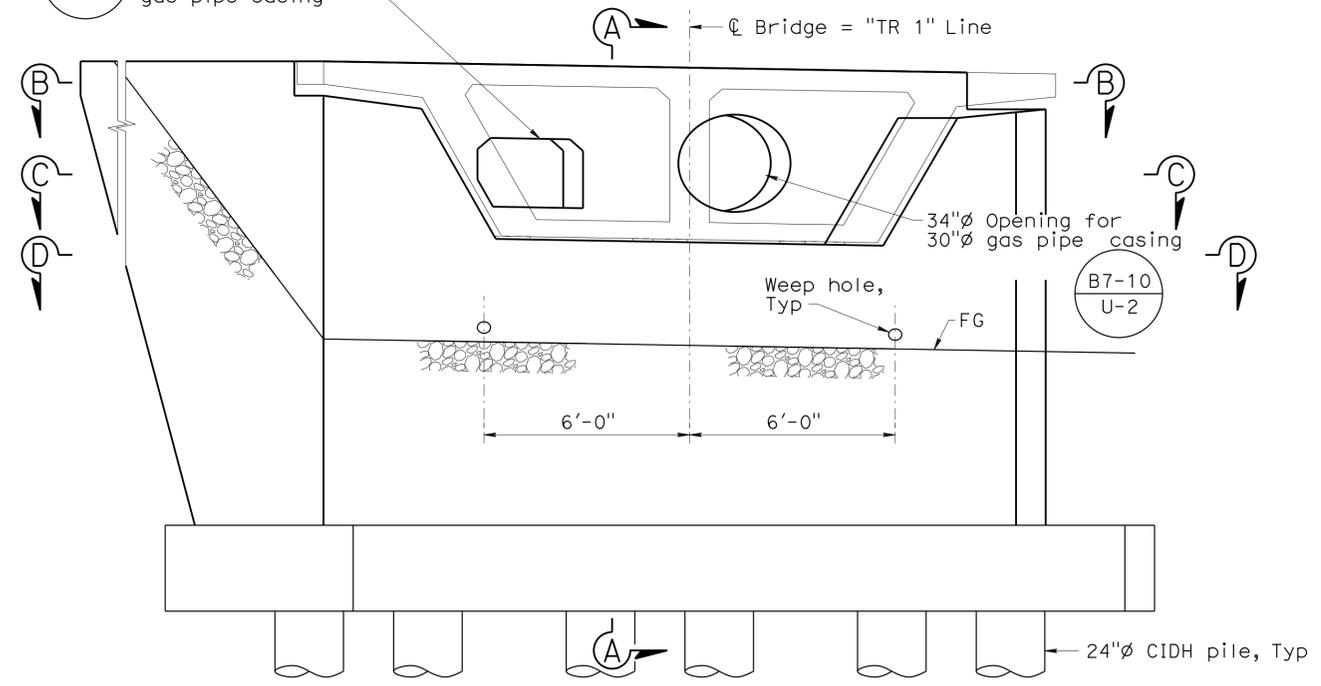
ABUTMENT 1 PLAN
 $\frac{3}{8}'' = 1'-0''$



ABUTMENT FOOTING PILE AND REINFORCEMENT PLAN
 $\frac{3}{8}'' = 1'-0''$

NOTE: Abutment 1 Footing shown, Abutment 3 Footing similar.

B7-10 U-2 Utility Opening for 20"Ø water pipe casing and 10"Ø gas pipe casing



ABUTMENT 1 ELEVATION
 $\frac{3}{8}'' = 1'-0''$

NOTES:

- For Sections A-A, B-B, C-C and D-D, see "ABUTMENT DETAILS NO. 1" sheet.
- For 'Bearing Pad Details', see "ABUTMENT DETAILS NO. 3" sheet.
- For Type 1 Retaining Wall Details, see "Arroyo Del Valle Bridge (Widen)" Plans.

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

PREPARED FOR THE
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 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO. N/A
 POST MILES N/A

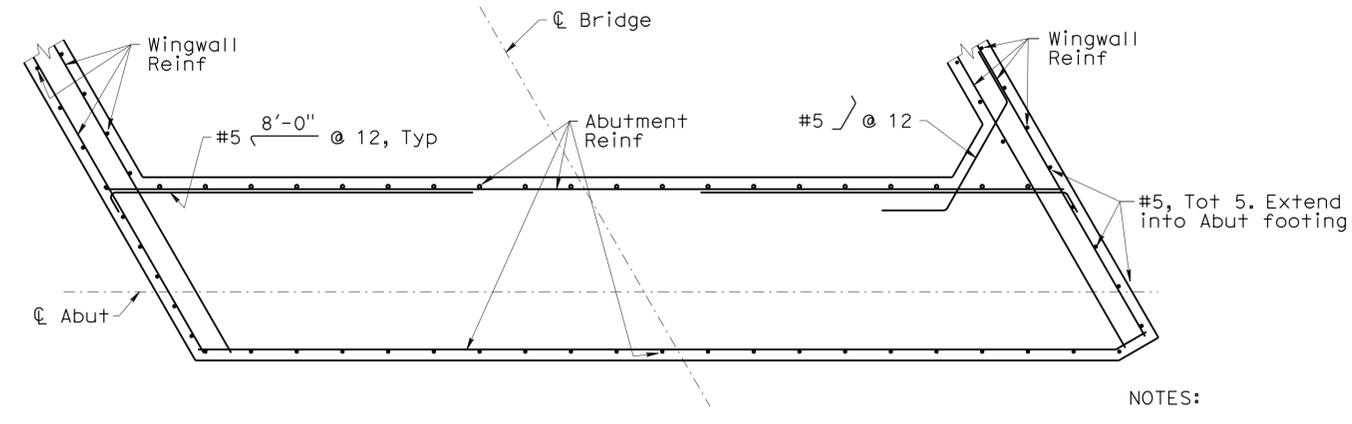
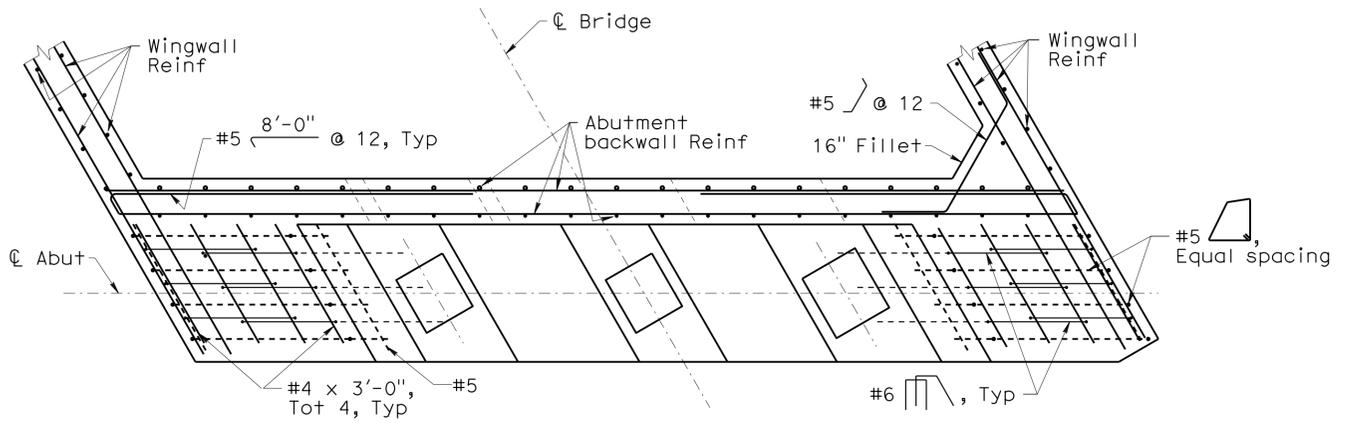
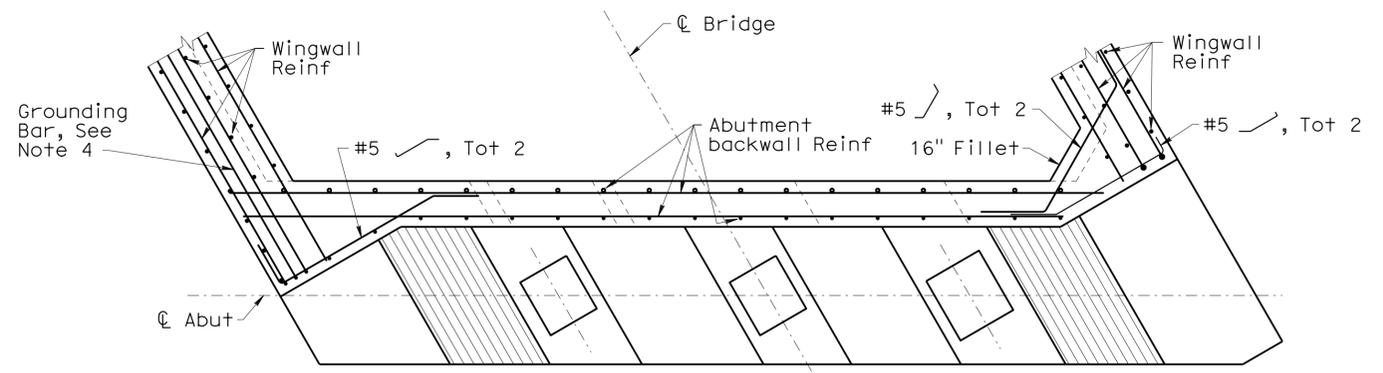
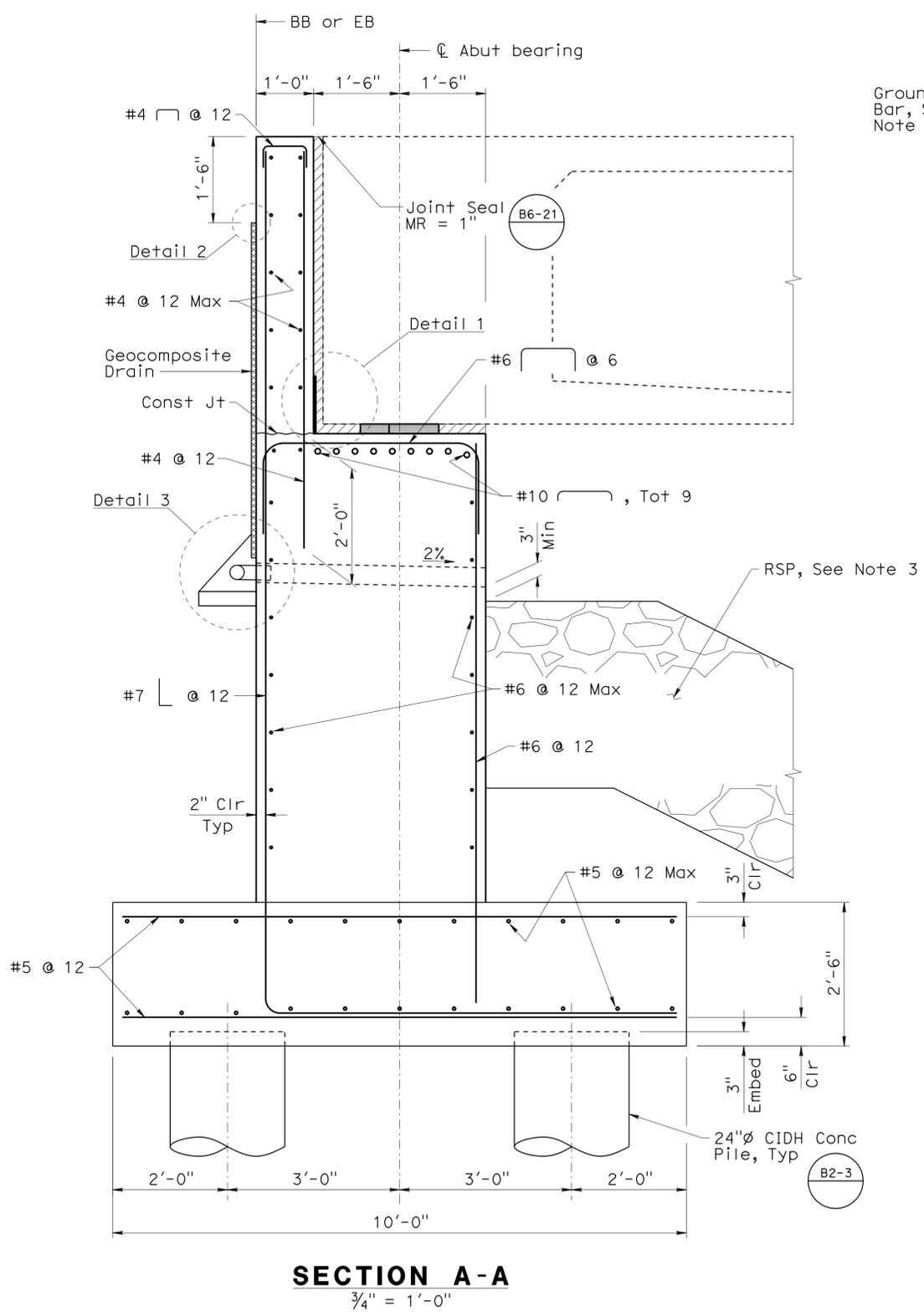
ARROYO DEL VALLE TRAIL BRIDGE
ABUTMENT LAYOUT NO. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	768	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE
 2-23-15
 PLANS APPROVAL DATE
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 SACRAMENTO, CALIFORNIA 95831



- NOTES:
1. For Detail 1, see "ABUTMENT DETAILS NO. 2" sheet.
 2. For Details 2 & 3, see "ABUTMENT DETAILS NO. 3" sheet.
 3. For details of rock slope protection, see "ROCK SLOPE PROTECTION" sheet.
 4. For grounding bar, see "ABUTMENT DETAILS NO. 2" sheet.

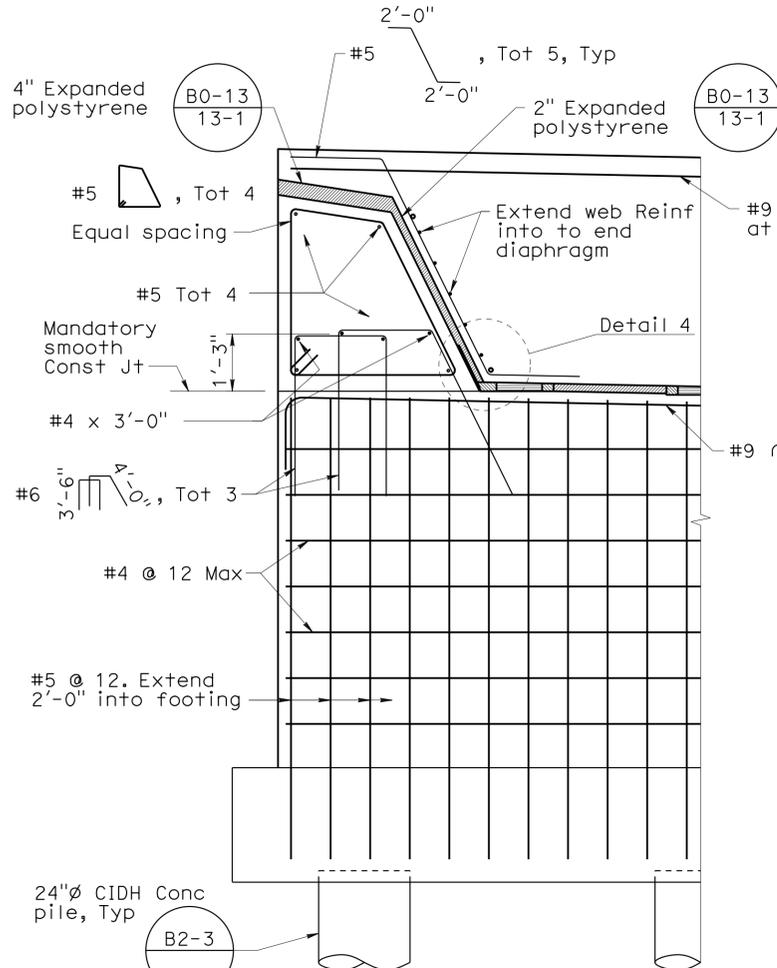
David Soon
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QUANTITIES	BY R. Huang	CHECKED W. Sennett

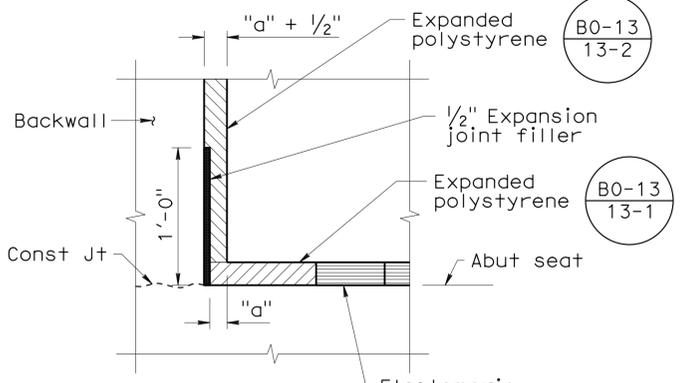
PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 PROJECT ENGINEER
 Xiangyang Fu

ARROYO DEL VALLE TRAIL BRIDGE
ABUTMENT DETAILS NO. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	769	814
Xiangyang Fu 01/16/15 REGISTERED CIVIL ENGINEER DATE					
2-23-15 PLANS APPROVAL DATE					
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MGE ENGINEERING, INC. 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CALIFORNIA 95831					

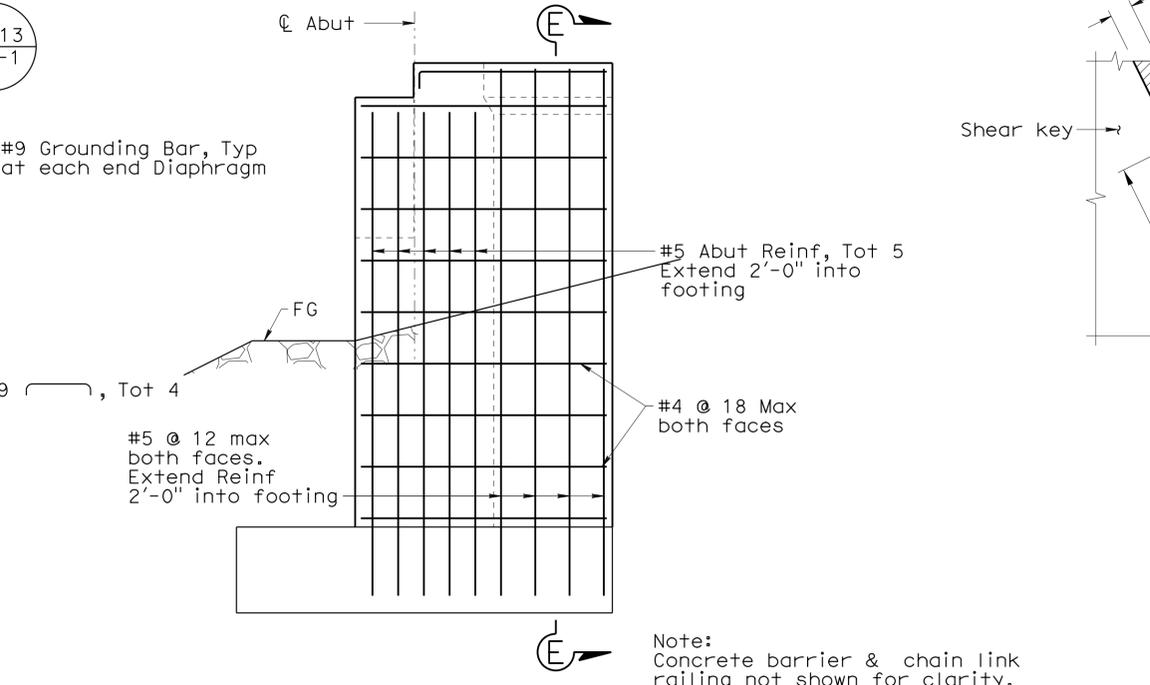


PART ELEVATION
1/2" = 1'-0"

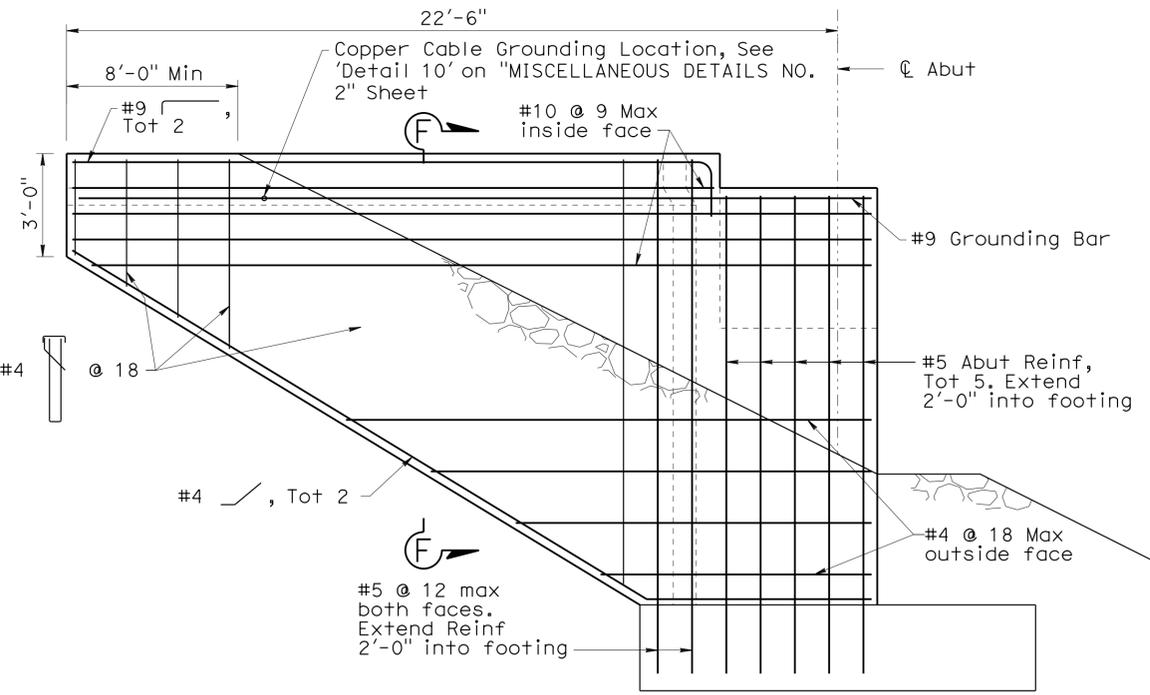


DETAIL 1
1 1/2" = 1'-0"

Note: For dimension "a", see Standard Plan RSP B6-21.

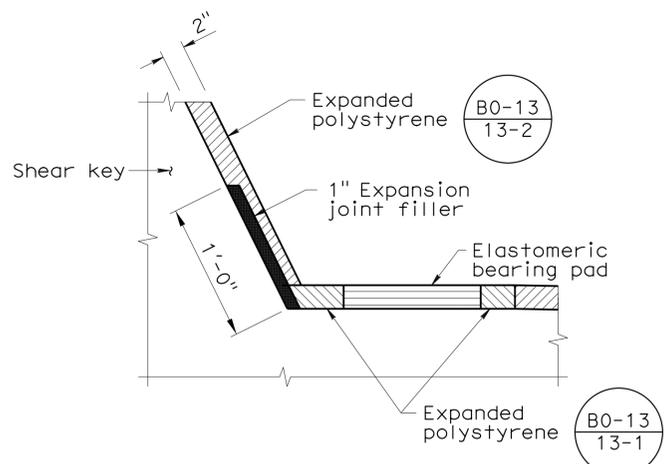


ABUTMENT RETURN WALL ELEVATION
3/8" = 1'-0"

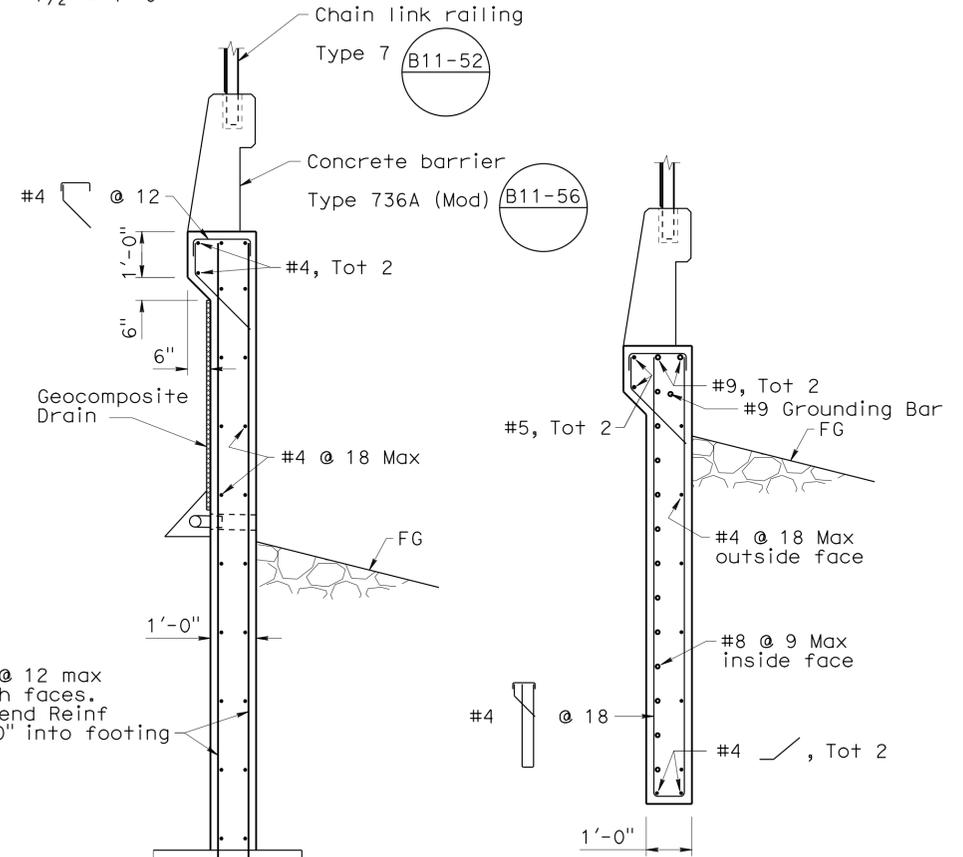


ABUTMENT WINGWALL ELEVATION
3/8" = 1'-0"

Note: Concrete barrier & chain link railing not shown for clarity.



DETAIL 4
1/2" = 1'-0"



SECTION E-E
1/2" = 1'-0"

NOTE:

- Abutment 1 wingwall & return wall shown, Abutment 3 return walls similar.

DESIGN OVERSIGHT
David Soon
2-23-15
SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
PROJECT ENGINEER

BRIDGE NO. N/A
POST MILES N/A
ARROYO DEL VALLE TRAIL BRIDGE
ABUTMENT DETAILS NO. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 0733
PROJECT NUMBER & PHASE: 4000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
02/09/08 10/27/10 05/27/14 01/16/15	7	19

FILE => 33-advtb-f-a01d+02.dgn

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	770	814

Xiangyang Fu 01/16/15
REGISTERED CIVIL ENGINEER DATE

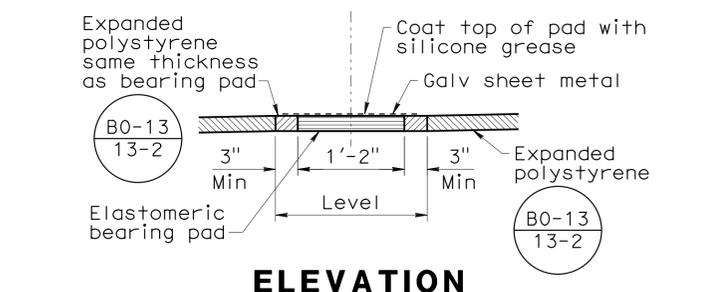
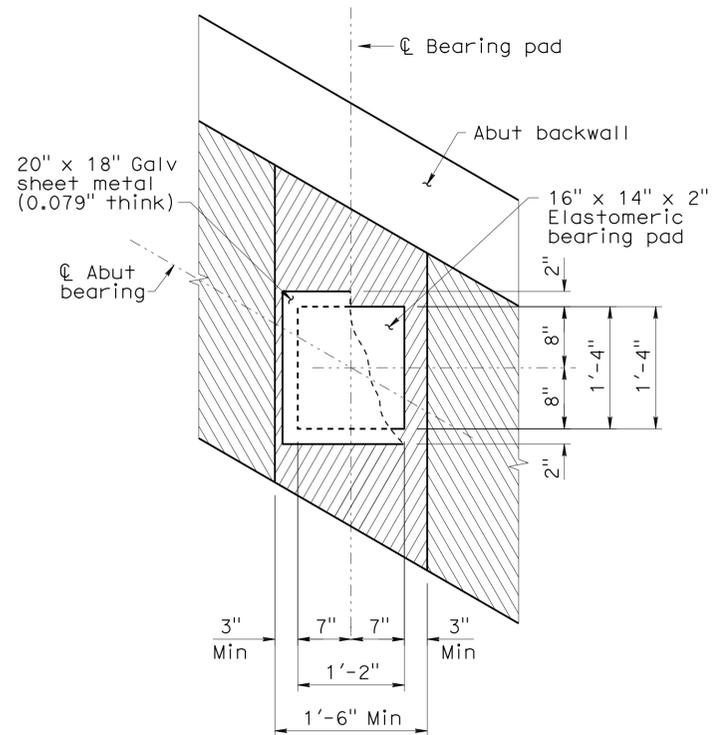
2-23-15
PLANS APPROVAL DATE

STATE OF CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER
XIANGYANG FU
No. C 72514
Exp. 06/30/16
CIVIL

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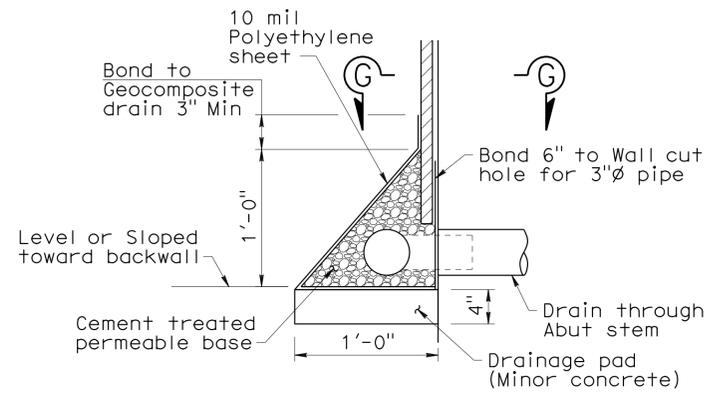
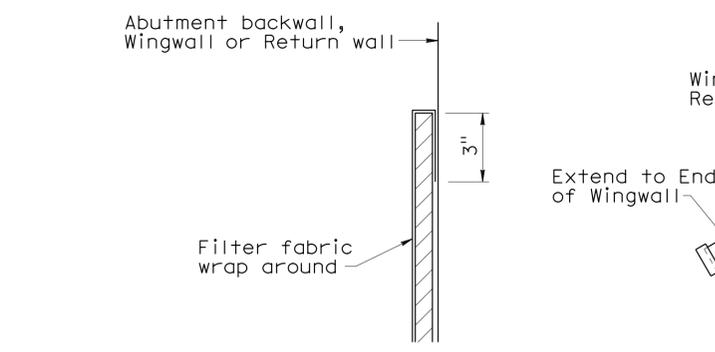
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SACRAMENTO, CALIFORNIA 95831



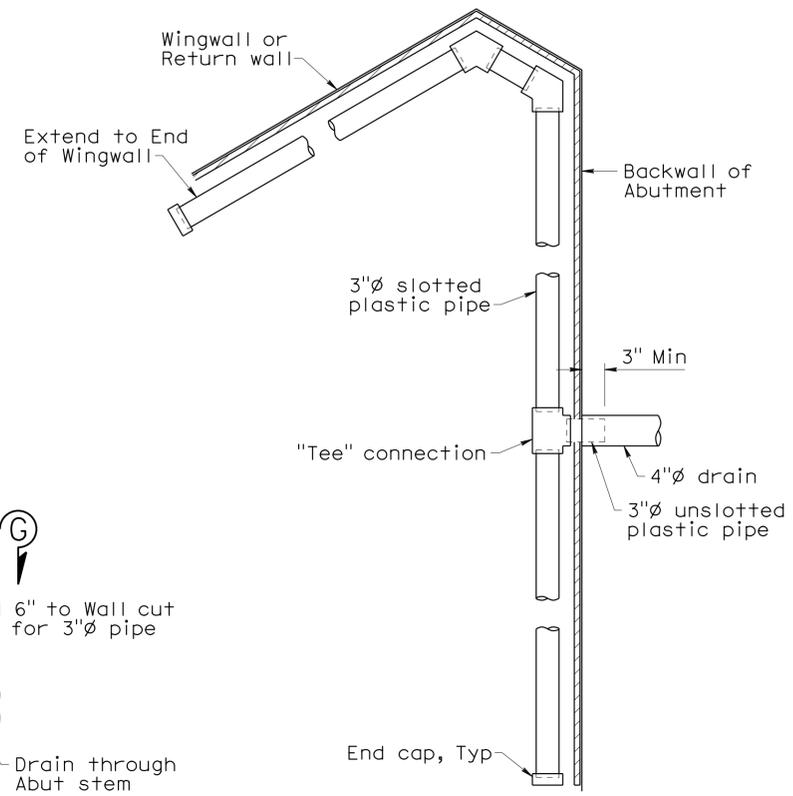
BEARING PAD DETAILS
1" = 1'-0"

Note: 16" x 14" x 2" shown, 18" x 16" x 2" similar.



- Notes:
- 4" drains at 14' Max center to center. Weep holes shall be 3" above finished grade.
 - Geocomposite drain, cement treated permeable base, and 3" slotted plastic pipe continuous behind abutment wingwalls & return walls. Cap ends of pipe. Provide "Tee" connection at each 4" drain.

WEEP HOLE AND GEOCOMPOSITE DRAIN
No Scale



David Soon
DESIGN OVERSIGHT
2-23-15
SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

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DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
PROJECT ENGINEER

BRIDGE NO.	N/A
POST MILES	N/A

ARROYO DEL VALLE TRAIL BRIDGE
ABUTMENT DETAILS NO. 3

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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UNIT: 0733
PROJECT NUMBER & PHASE: 4000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
02/09/08 10/27/10 05/27/14 01/16/15	8	19

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04	Ala	84	22.9/22.7	771	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

2-23-15
 PLANS APPROVAL DATE

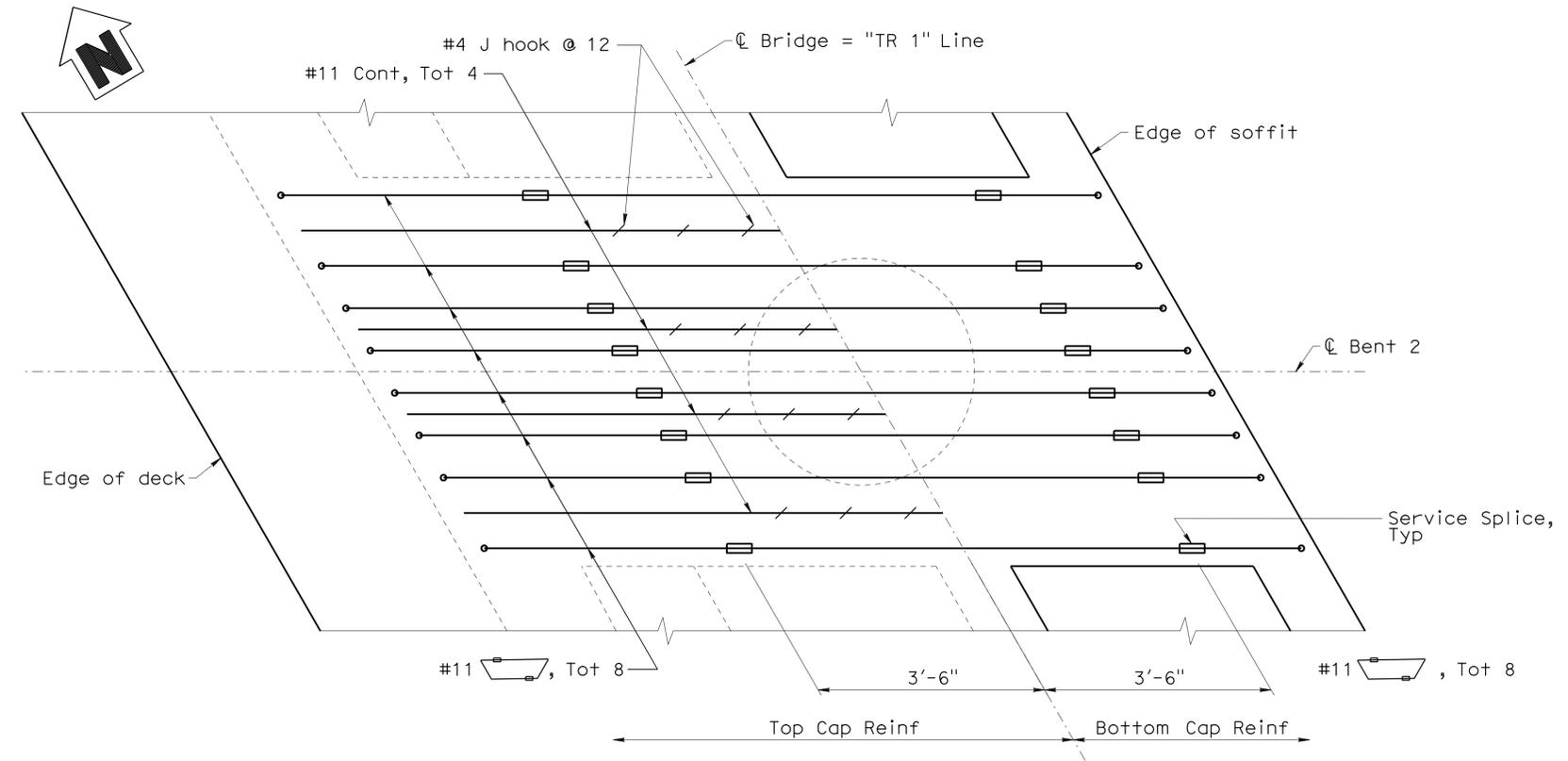
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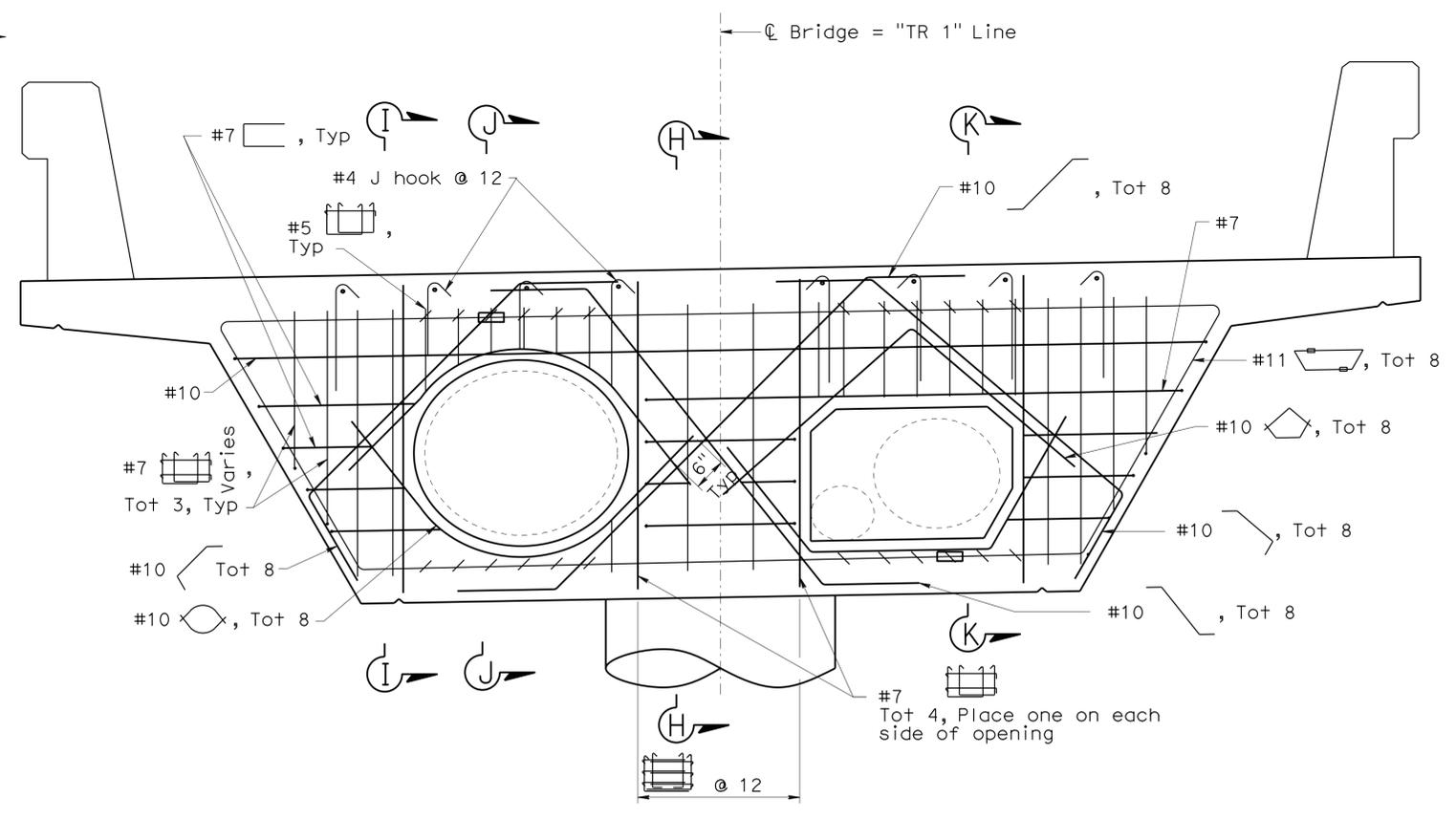
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NOTE:
 Field bend column reinforcement to clear utility openings.



BENT PLAN
 $\frac{3}{4}'' = 1'-0''$



BENT ELEVATION
 $\frac{3}{4}'' = 1'-0''$

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO.	N/A
POST MILES	N/A

ARROYO DEL VALLE TRAIL BRIDGE
BENT LAYOUT

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0733
 PROJECT NUMBER & PHASE: 4000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
02/09/08 10/27/10 05/27/14 01/16/15	9	19

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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Xiangyang Fu 01/16/15
REGISTERED CIVIL ENGINEER DATE

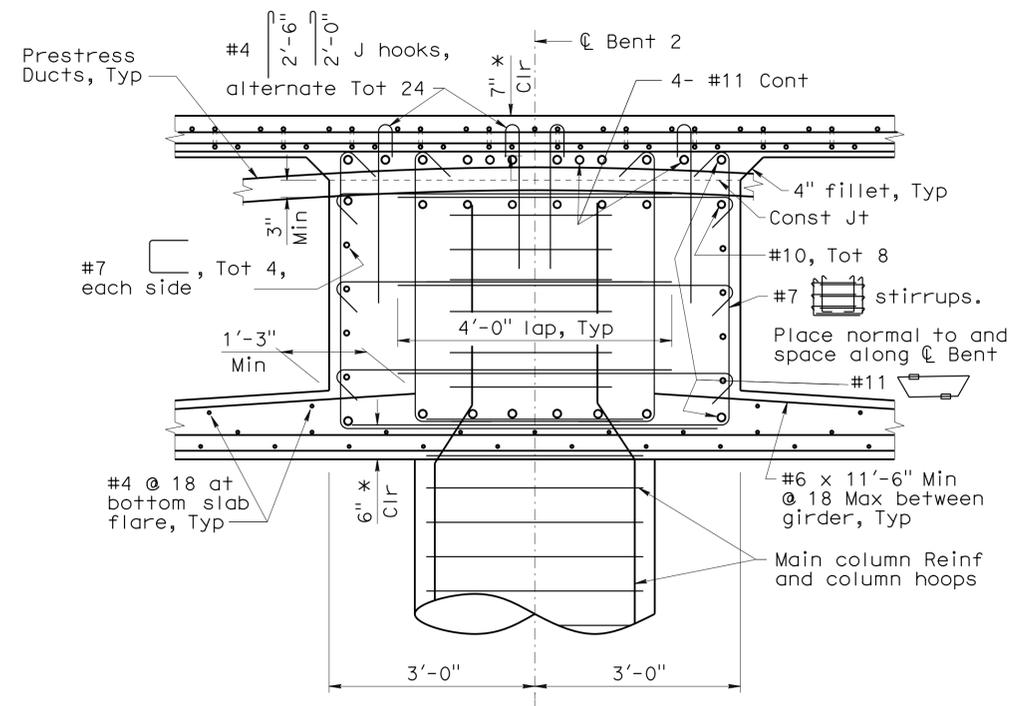
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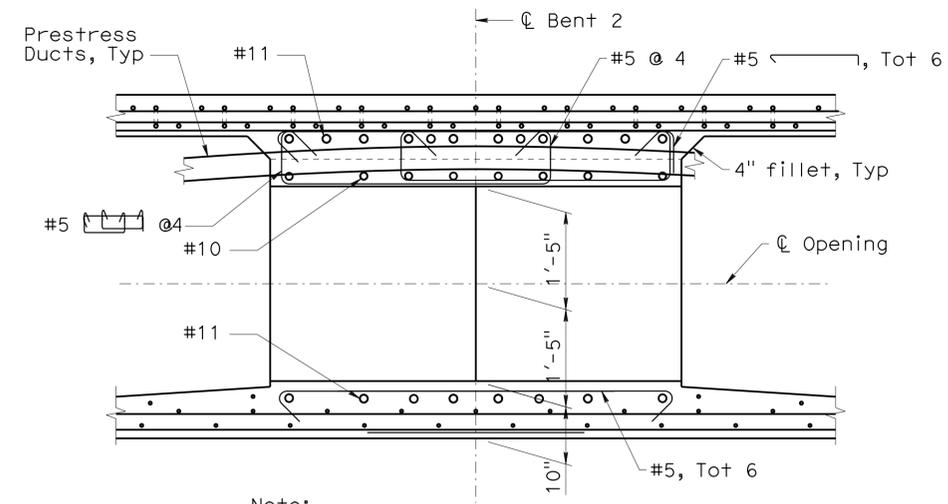


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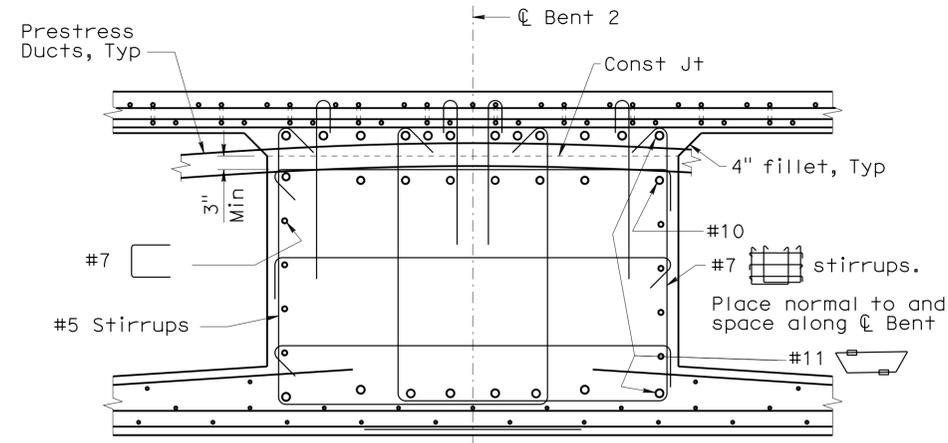
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7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



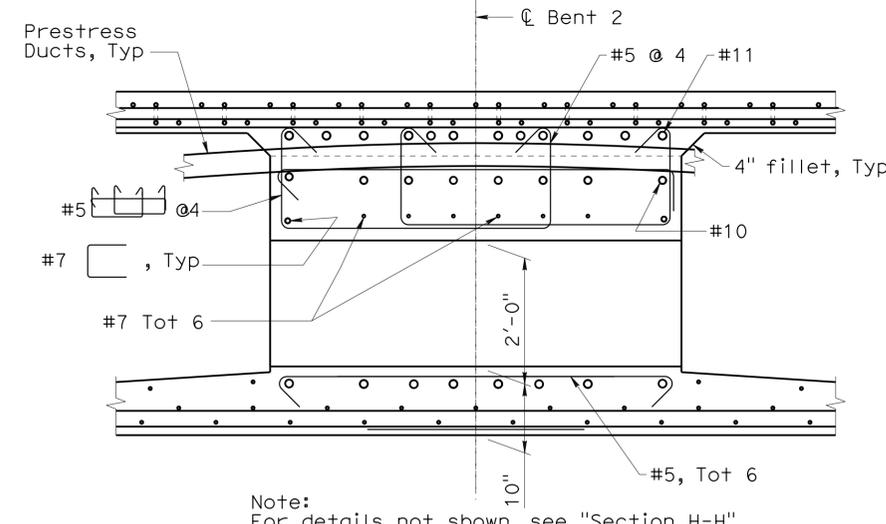
SECTION H-H
 $\frac{3}{4}'' = 1'-0''$



SECTION J-J
 $\frac{3}{4}'' = 1'-0''$



SECTION I-I
 $\frac{3}{4}'' = 1'-0''$



SECTION K-K
 $\frac{3}{4}'' = 1'-0''$

David Soon
DESIGN OVERSIGHT
2-23-15
SIGN OFF DATE

DESIGN BY: X. Fu
DETAILS BY: K. Wang
QUANTITIES BY: R. Huang

CHECKED BY: D. Wang
CHECKED BY: D. Wang
CHECKED BY: W. Sennett

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
PROJECT ENGINEER

BRIDGE NO. N/A
POST MILES N/A

ARROYO DEL VALLE TRAIL BRIDGE
BENT DETAILS NO. 1

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 0733
PROJECT NUMBER & PHASE: 4000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
02/09/08 10/27/10 05/27/14 01/16/15	10	19

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

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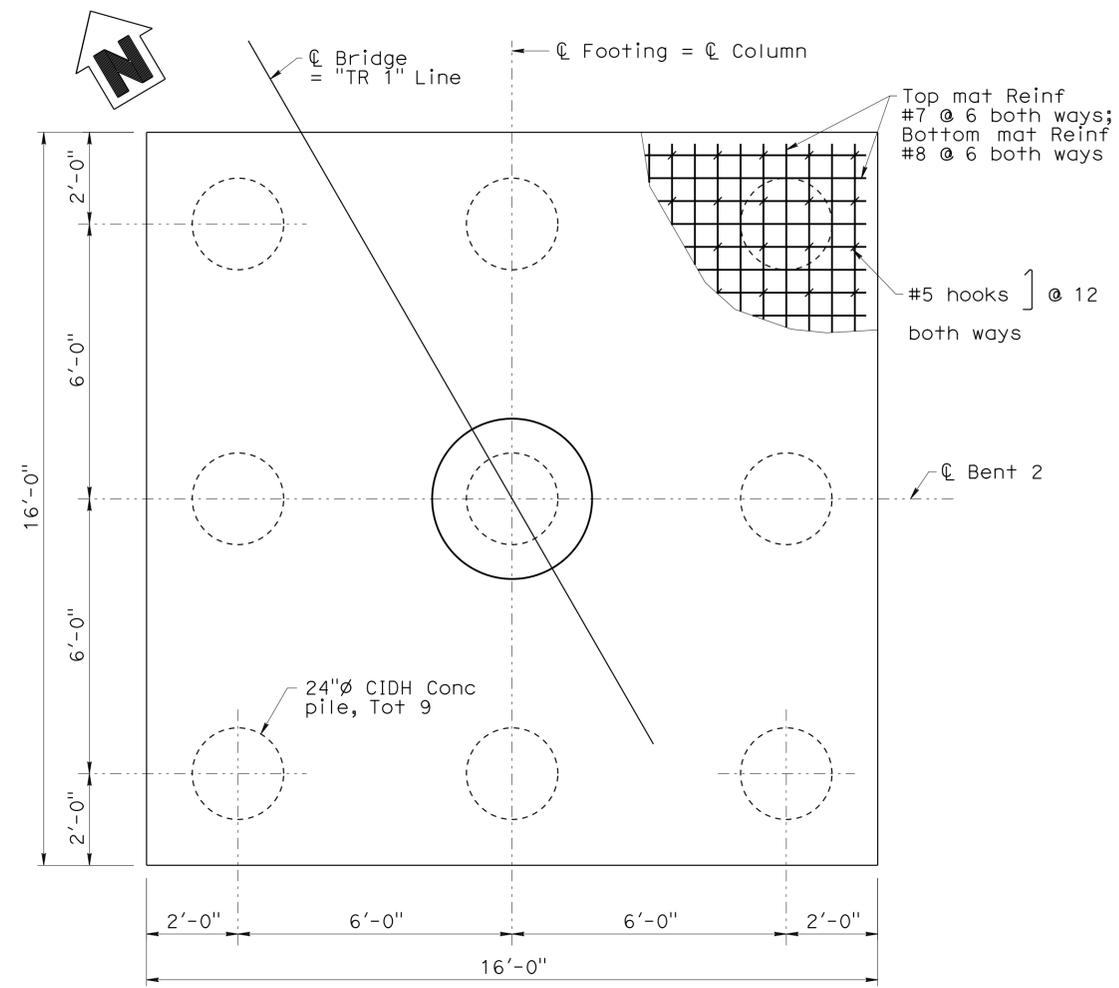
Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

2-23-15
 PLANS APPROVAL DATE

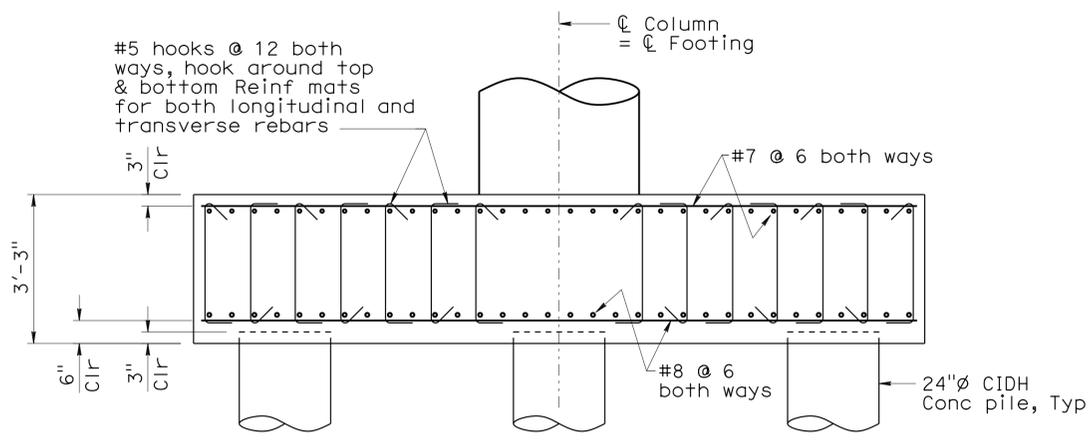
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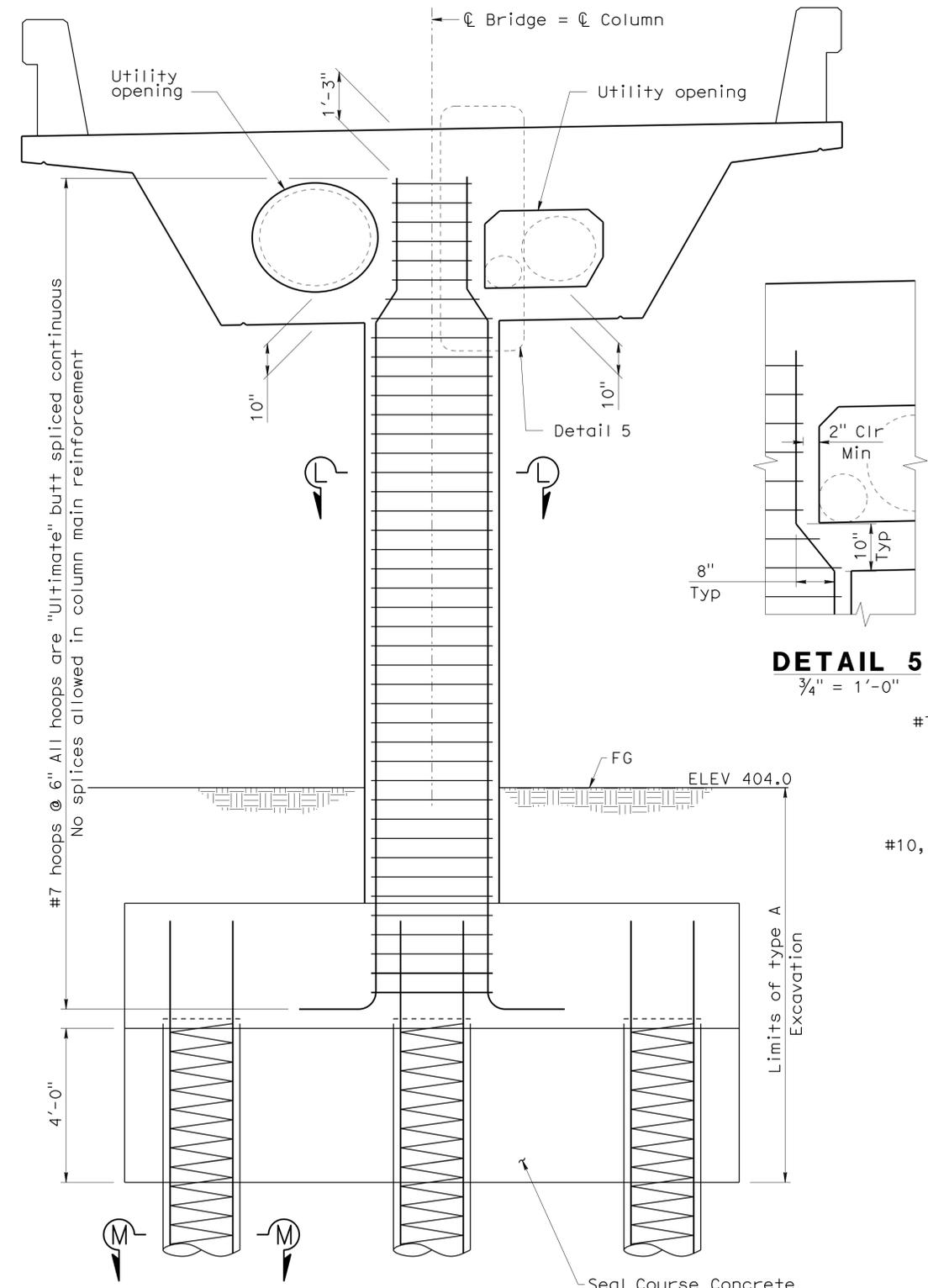
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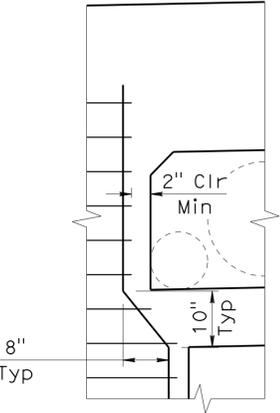
BENT FOOTING PLAN
 $\frac{1}{2}'' = 1'-0''$



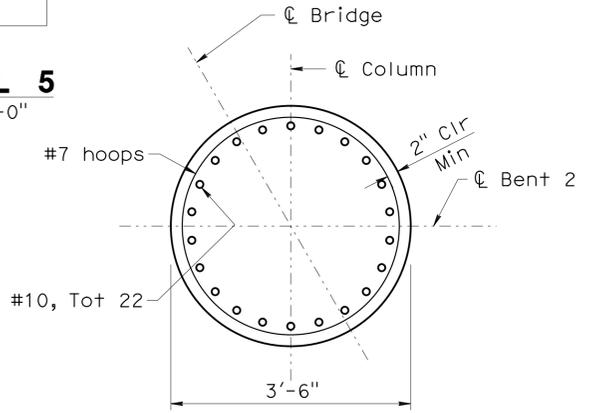
BENT FOOTING ELEVATION
 $\frac{1}{2}'' = 1'-0''$



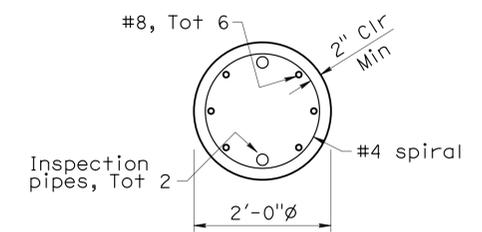
BENT ELEVATION
 $\frac{1}{2}'' = 1'-0''$



DETAIL 5
 $\frac{3}{4}'' = 1'-0''$



SECTION L-L
 $\frac{3}{4}'' = 1'-0''$



SECTION M-M
 $\frac{3}{4}'' = 1'-0''$

Note:
 For details not shown,
 see Standard Plan B2-3.

NOTE:
 For Sections H-H and I-I, see "BENT DETAILS" sheet.

DESIGN OVERSIGHT
David Soon
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER
Xiangyang Fu

ARROYO DEL VALLE TRAIL BRIDGE
BENT DETAILS NO. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES
 FOR REDUCED PLANS



UNIT: 0733
 PROJECT NUMBER & PHASE: 4000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING
 EARLIER REVISION DATES

REVISION DATES	SHEET	OF
02/09/08 10/27/10 05/27/14 01/16/15	11	19

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

PRESTRESSING NOTES

270 KSI Low Relaxation Strand:
 $P_{jack} = 2550$ kips
 Anchor Set = $\frac{3}{8}$ inch
 Total number of girder = 3

Distribution of prestress force (P_{jack}) between girders shall not exceed the ratio of 3:2. Maximum final force variation between girders shall not exceed 725 kips.

Concrete: $f'_c = 4000$ psi @ 28 days
 $f'_{ci} = 3500$ psi @ time of stressing
 Contractor must submit elongation calculations based on initial stress at
 $\square = 0.897$ times jacking stress.
 One end stressing must be performed from Abutment 1 end only.
 Prestress force design is based on friction coefficient $\mu = 0.15$, $k = 0.0002/ft$ and modified for curvature

LEGEND

Indicates Girder width in inches

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	775	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

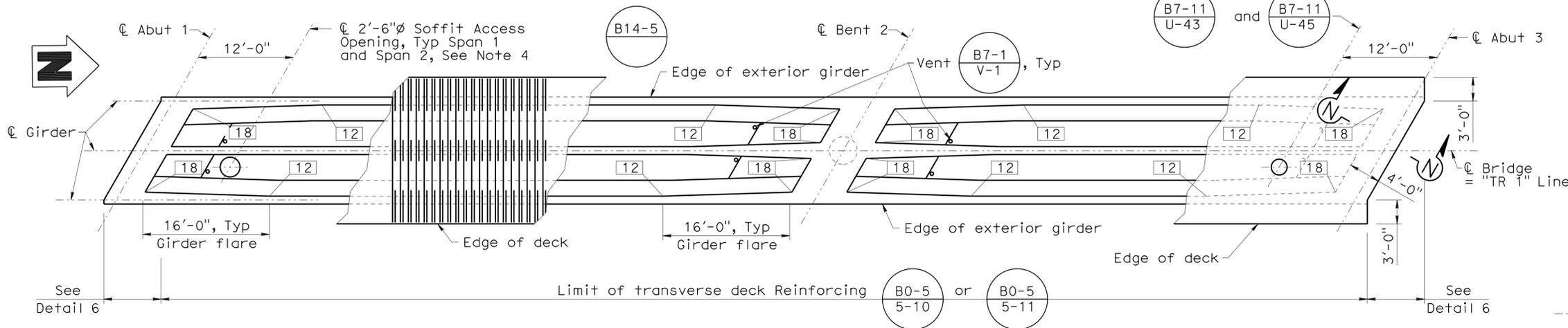
2-23-15
 PLANS APPROVAL DATE

XIANGYANG FU
 No. C 72514
 Exp. 06/30/16
 CIVIL
 STATE OF CALIFORNIA

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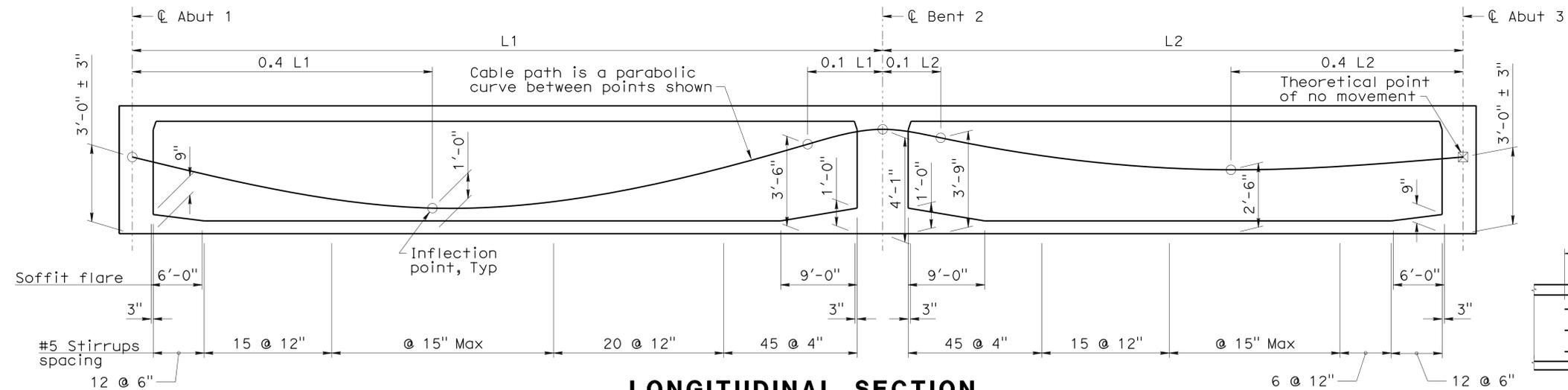
ALAMEDA COUNTY TRANSPORTATION COMMISSION
 1111 BROADWAY, SUITE 800
 OAKLAND, CA 94607

MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831



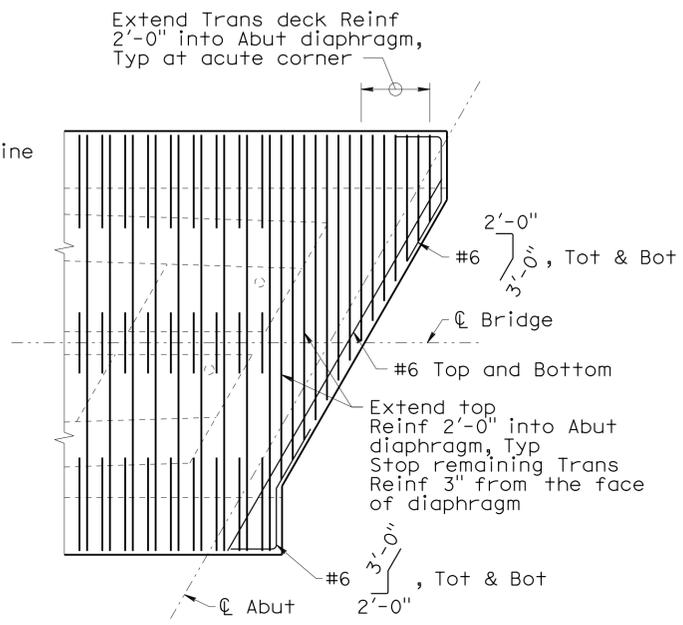
GIRDER LAYOUT

$\frac{1}{8}'' = 1'-0''$



LONGITUDINAL SECTION

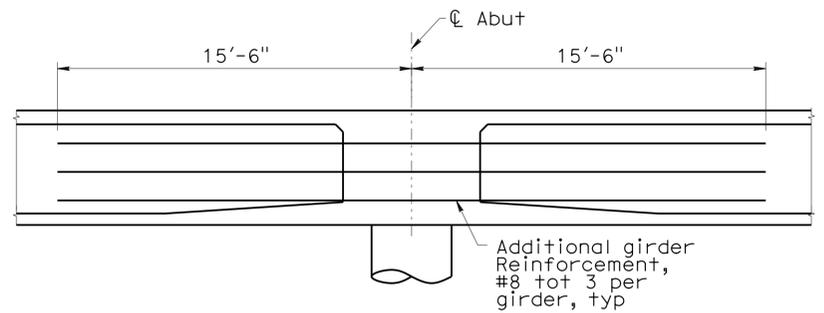
$\frac{1}{8}'' = 1'-0''$ (H)
 $\frac{3}{8}'' = 1'-0''$ (V)



Note: Abut 3 shown, Abut 1 similar

DETAIL 6

$\frac{1}{4}'' = 1'-0''$



ADDITIONAL GIRDER REINFORCEMENT

$\frac{1}{4}'' = 1'-0''$

- NOTES:
- For Section N-N, see "GIRDER REINFORCEMENT" sheet.
 - For 'Camber Diagram', see "DECK CONTOURS" sheet.
 - All reinforcement should be adequately anchored.
 - For Soffit Access Opening Details, see "MISCELLANEOUS DETAILS NO.1" sheet.

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO. N/A
 POST MILES N/A

ARROYO DEL VALLE TRAIL BRIDGE
GIRDER LAYOUT

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	776	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

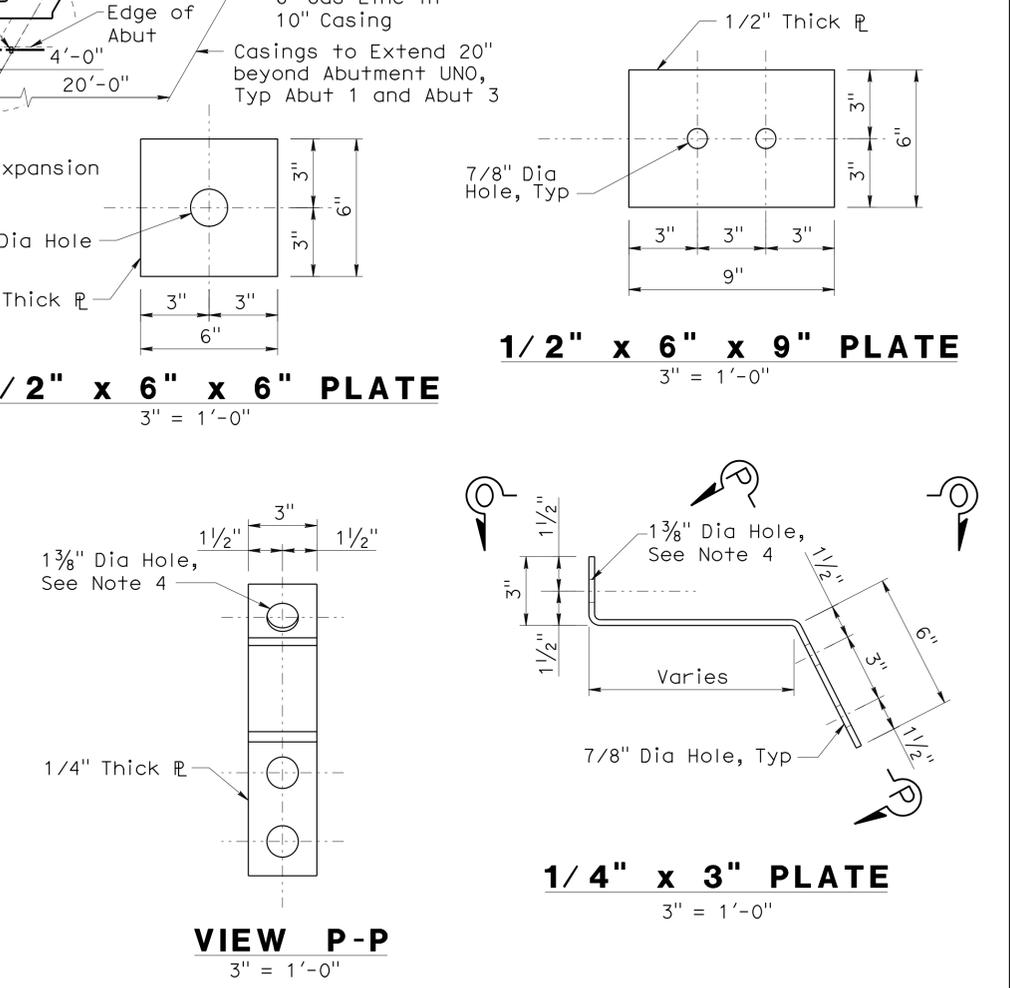
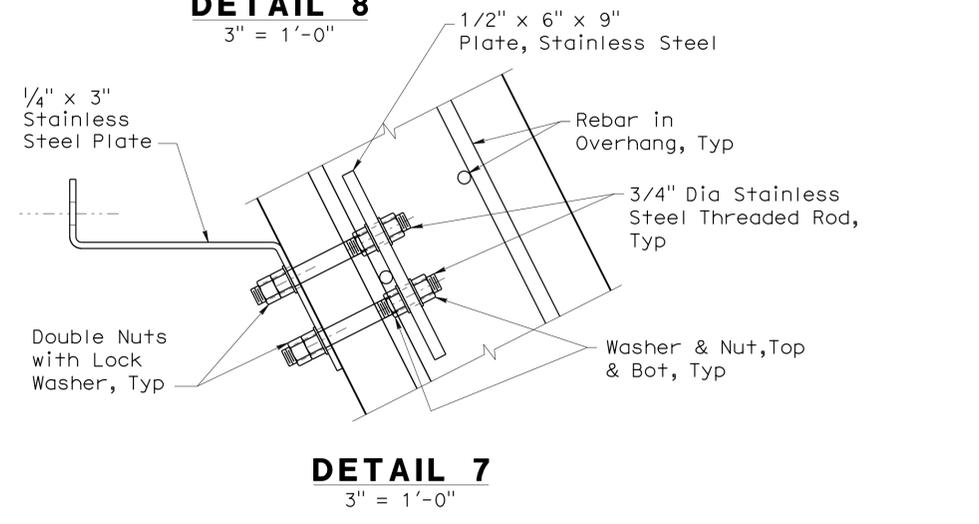
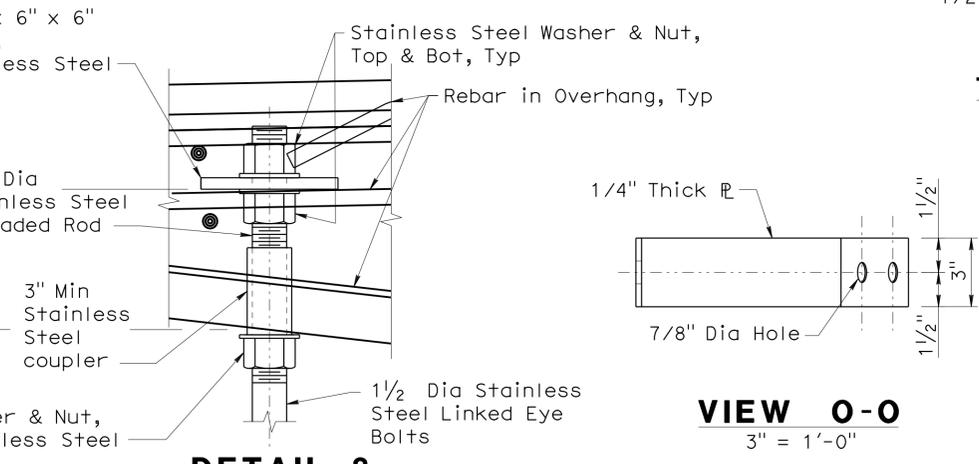
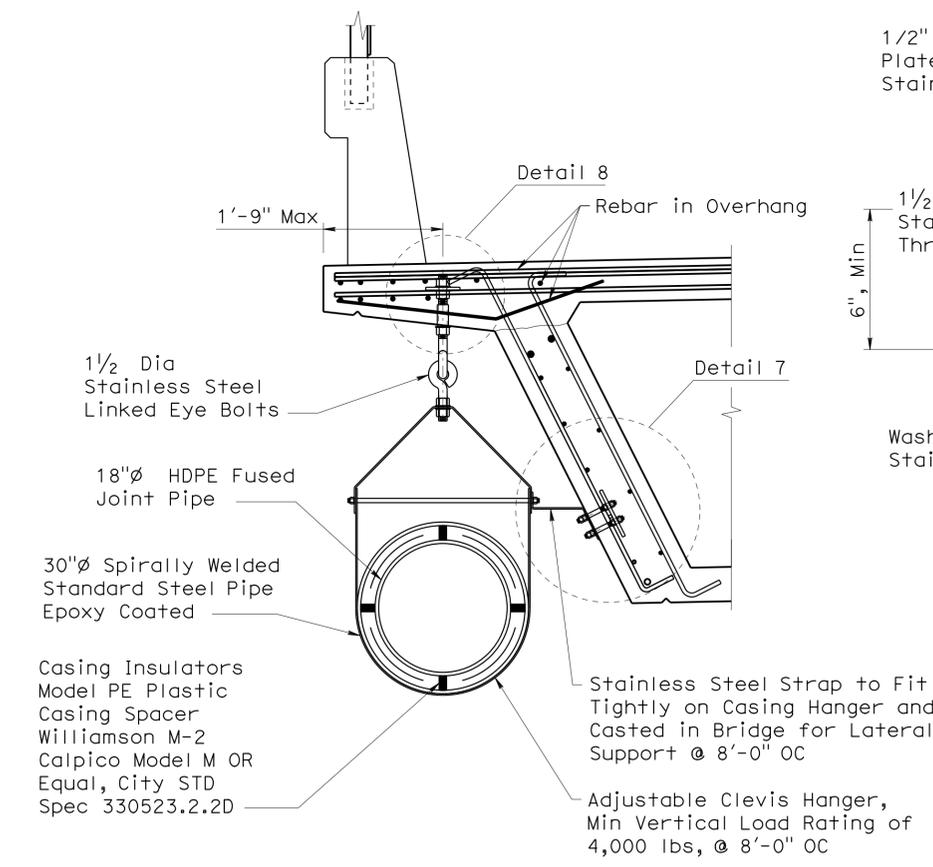
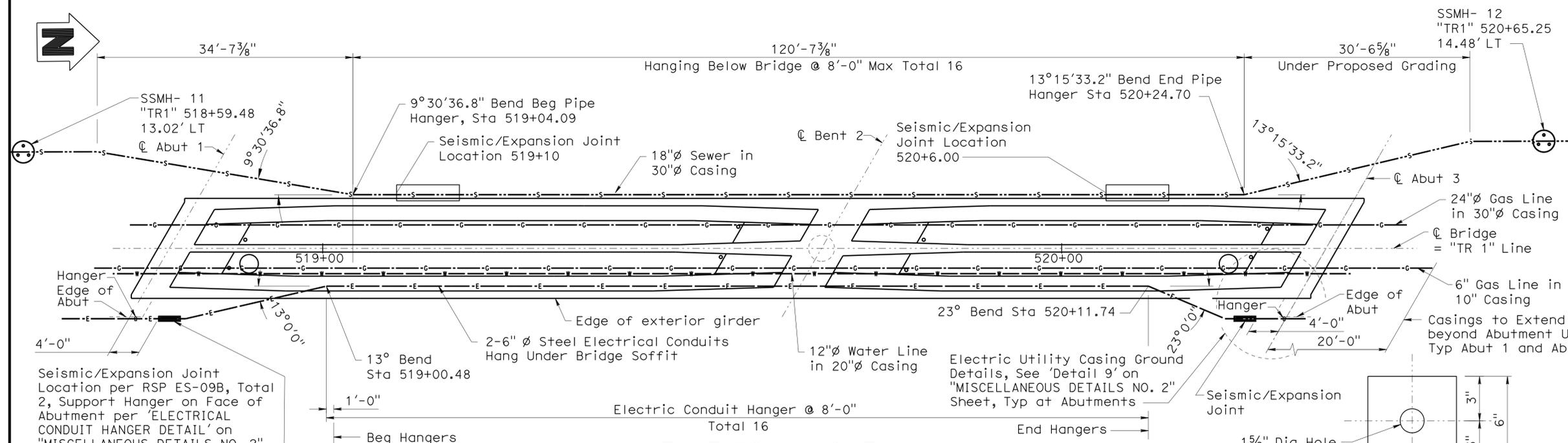
2-23-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 XIANGYANG FU
 No. C 72514
 Exp. 06/30/16
 CIVIL
 STATE OF CALIFORNIA

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 SACRAMENTO, CALIFORNIA 95831



- NOTES:
1. Seismic/Expansion joints for electrical conduit to be located on straight pipe sections, between hangers. Hanger spacing may need to be adjusted at these joints.
 2. Electrical conduit Seismic/Expansion joints to be provided with internal grounding, and able to accommodate a movement rating of 1", min.
 3. Verify hanger size with hanger supplier.

DESIGN OVERSIGHT
 David Soon
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO. N/A
 POST MILES N/A

ARROYO DEL VALLE TRAIL BRIDGE
BRIDGE UTILITY DETAILS

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	777	814

Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

2-23-15
 PLANS APPROVAL DATE

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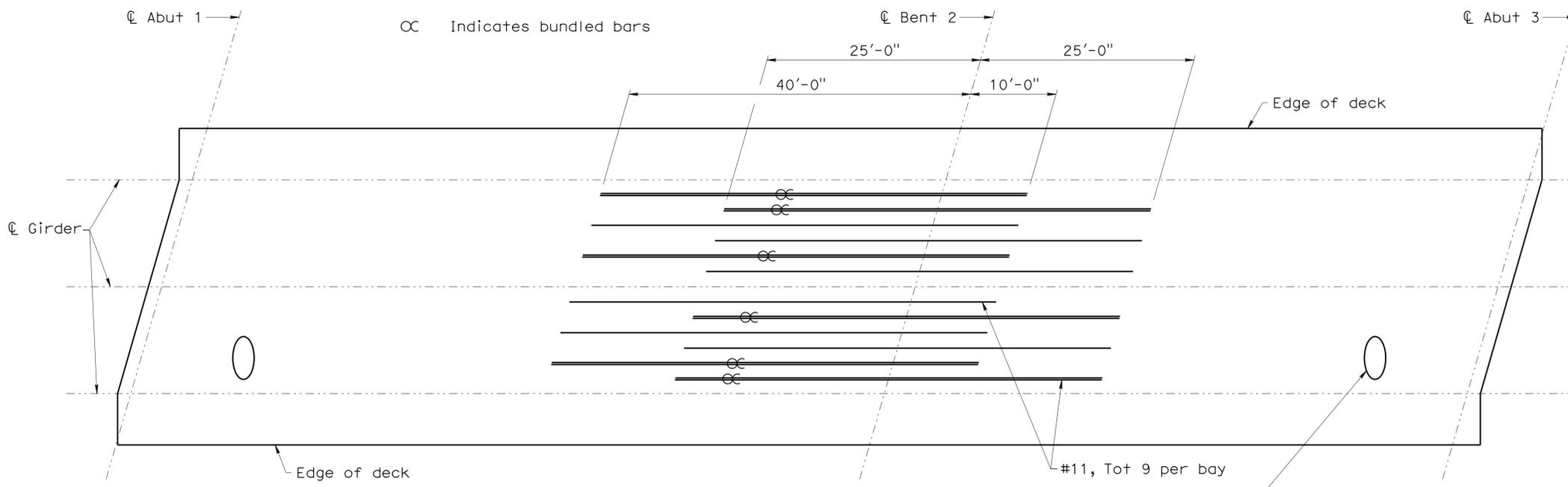
ALAMEDA COUNTY TRANSPORTATION COMMISSION
 1111 BROADWAY, SUITE 800
 OAKLAND, CA 94607

MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831

REGISTERED PROFESSIONAL ENGINEER
 XIANGYANG FU
 No. C 72514
 Exp. 06/30/16
 CIVIL
 STATE OF CALIFORNIA

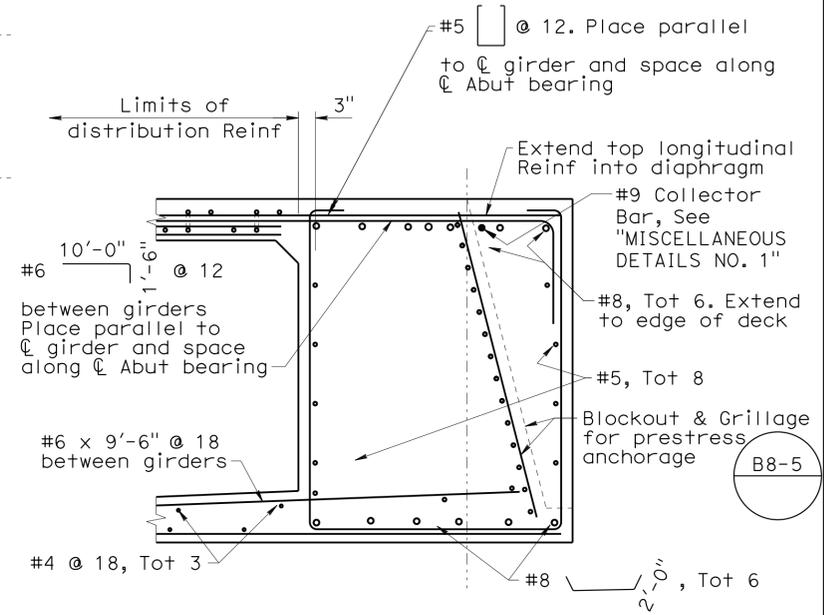
LEGEND

⊗ Indicates bundled bars



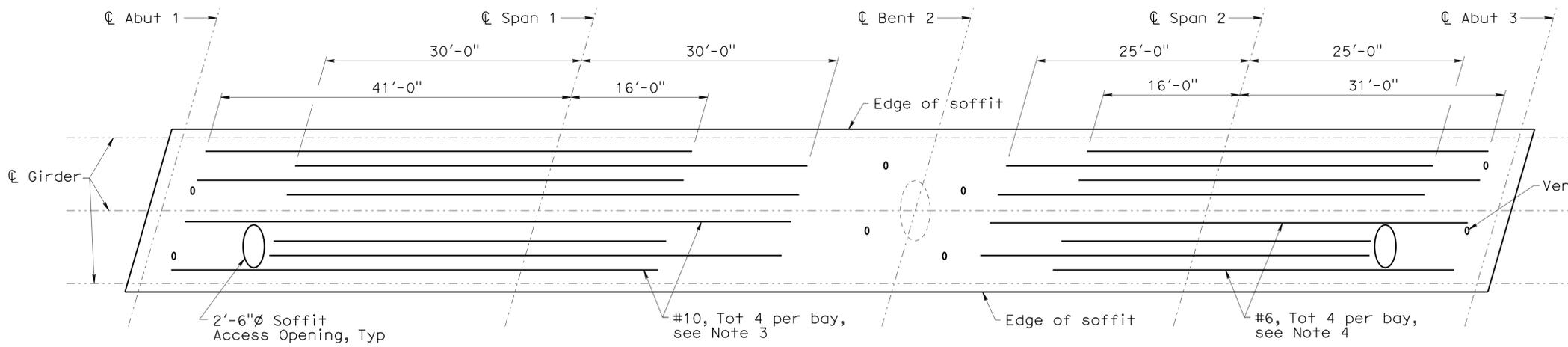
ADDITIONAL DECK REINFORCEMENT

1/8" = 1'-0" (Longit)
 1/4" = 1'-0" (Trans)



SECTION N-N

3/4" = 1'-0"



ADDITIONAL SOFFIT REINFORCEMENT

1/8" = 1'-0" (Longit)
 1/4" = 1'-0" (Trans)

NOTE:
 Splices are not allowed in additional deck and soffit reinforcement.

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO. N/A
ARROYO DEL VALLE TRAIL BRIDGE
 GIRDER REINFORCEMENT

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 0733
 PROJECT NUMBER & PHASE: 4000205811

CONTRACT NO.: 04-297624

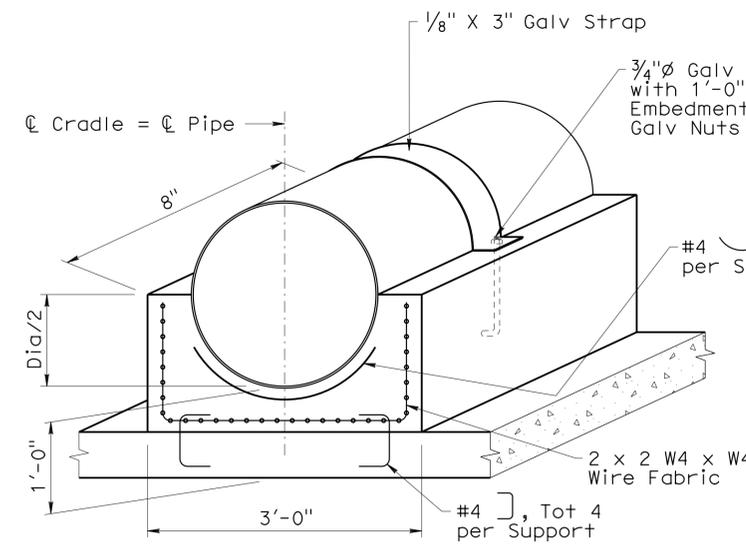
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
02/09/08 10/27/10 05/27/14 01/16/15	15	19

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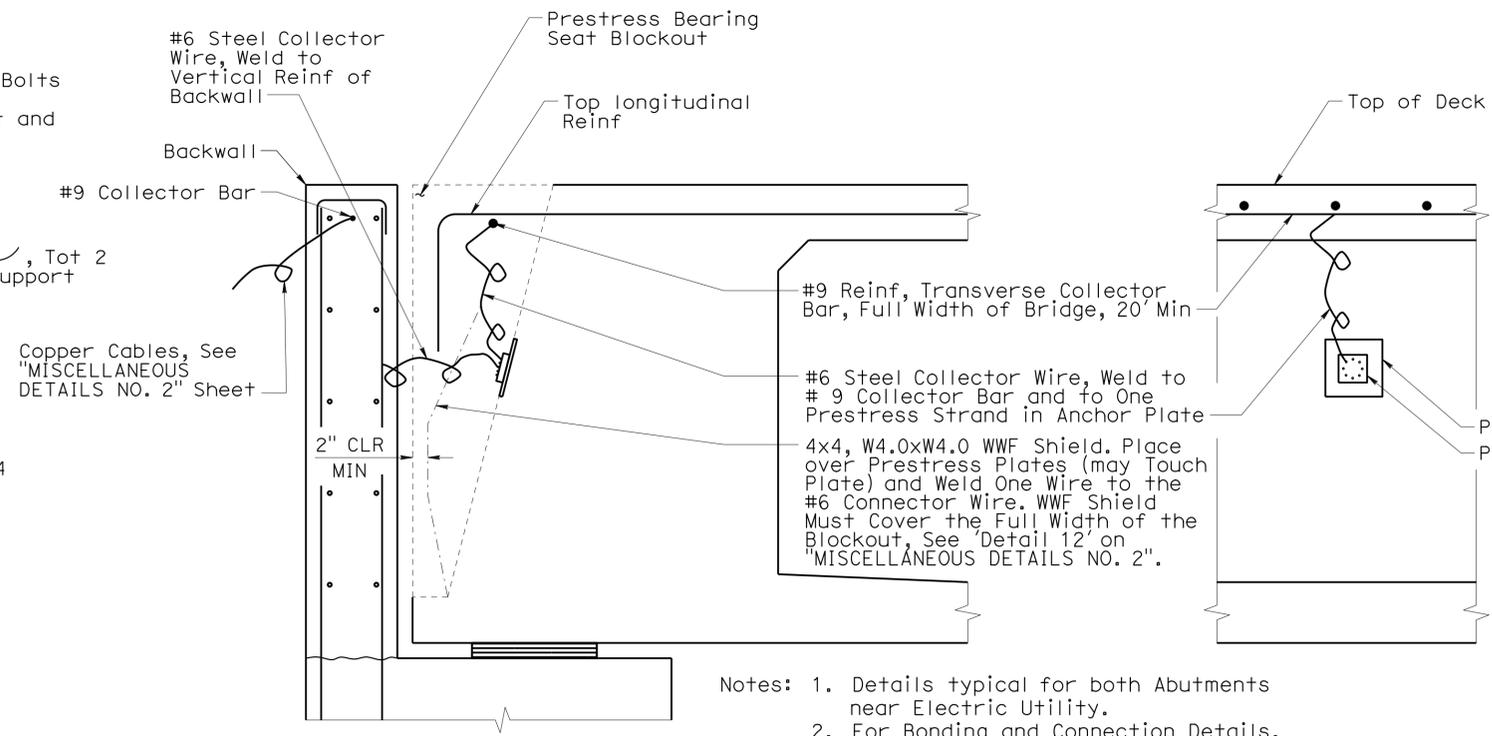
USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	778	814
<p>Xiangyang Fu 01/16/15 REGISTERED CIVIL ENGINEER DATE</p> <p>2-23-15 PLANS APPROVAL DATE</p> <p>ALAMEDA COUNTY TRANSPORTATION COMMISSION 1111 BROADWAY, SUITE 800 OAKLAND, CA 94607</p> <p>MGE ENGINEERING, INC. 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CALIFORNIA 95831</p>					



Note:
Pipe cradles shall be placed at 10'-0" Max spacing,
and verified with utility owner.

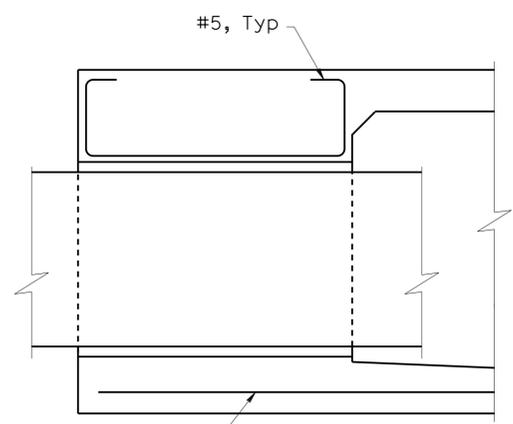
PIPE CRADLE DETAIL
1" = 1'-0"



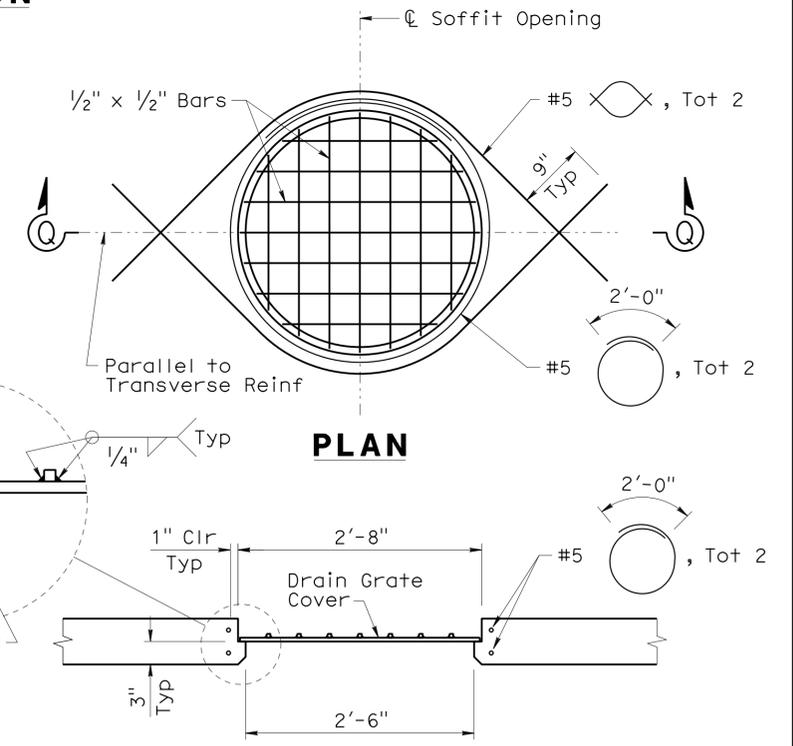
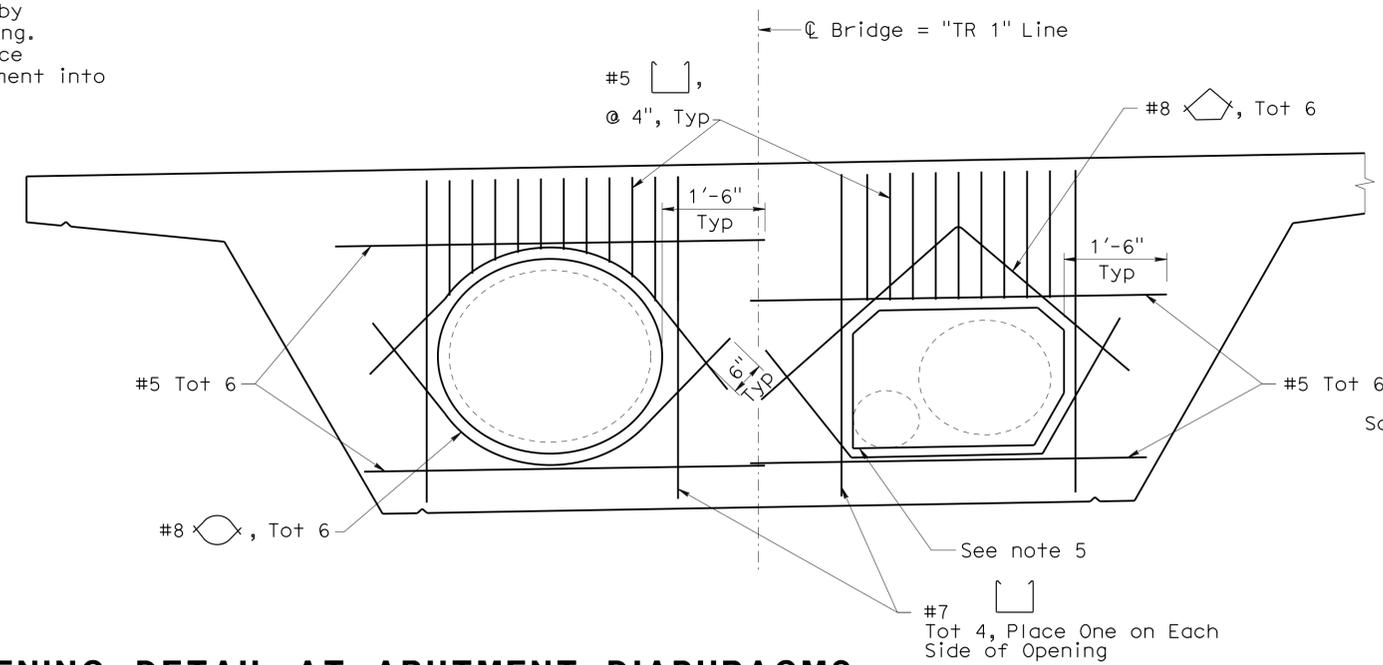
Notes: 1. Details typical for both Abutments near Electric Utility.
2. For Bonding and Connection Details, See 'Detail 11' on 'MISCELLANEOUS DETAILS NO. 2' sheet.

SIDE SECTION **END ELEVATION**
PRESTRESS TENDON GROUNDING CONNECTION
No Scale

- Note:
1. Seal utilities at abutments with concrete or mortar, after tightly wrapping utility with 2 layers of 15 LBS building paper. Seal to be placed after stressing is completed.
 2. Main reinforcement to clear opening.
 3. Reinforcement to be same bar size and 2/3 the spacing of adjacent reinforcement shown on Project Plans.
 4. Replace each set of 2-#9 bars cut off by opening. Place 1/2 on each side of opening.
 5. When there is insufficient space to place reinforcement as shown, hook reinforcement into exterior girder.



UTILITY OPENING DETAIL AT ABUTMENT DIAPHRAGMS
3/4" = 1'-0"



SECTION Q-Q
SOFFIT ACCESS OPENING AND SOFFIT DRAIN DETAIL
1" = 1'-0"

David Soon
DESIGN OVERSIGHT
2-23-15
SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
PROJECT ENGINEER

BRIDGE NO.	N/A	ARROYO DEL VALLE TRAIL BRIDGE
POST MILES	N/A	
MISCELLANEOUS DETAILS NO. 1		

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	779	814

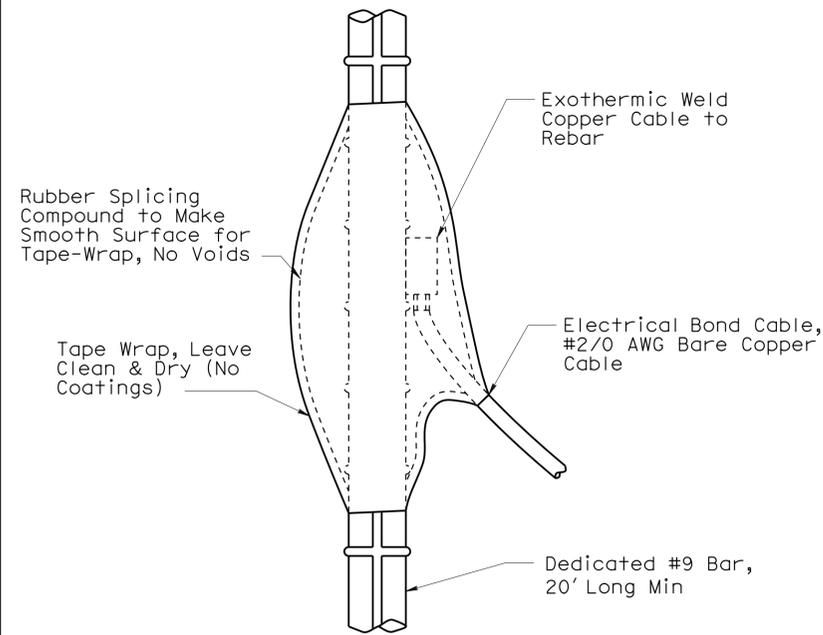
Xiangyang Fu 01/16/15
 REGISTERED CIVIL ENGINEER DATE

2-23-15
 PLANS APPROVAL DATE

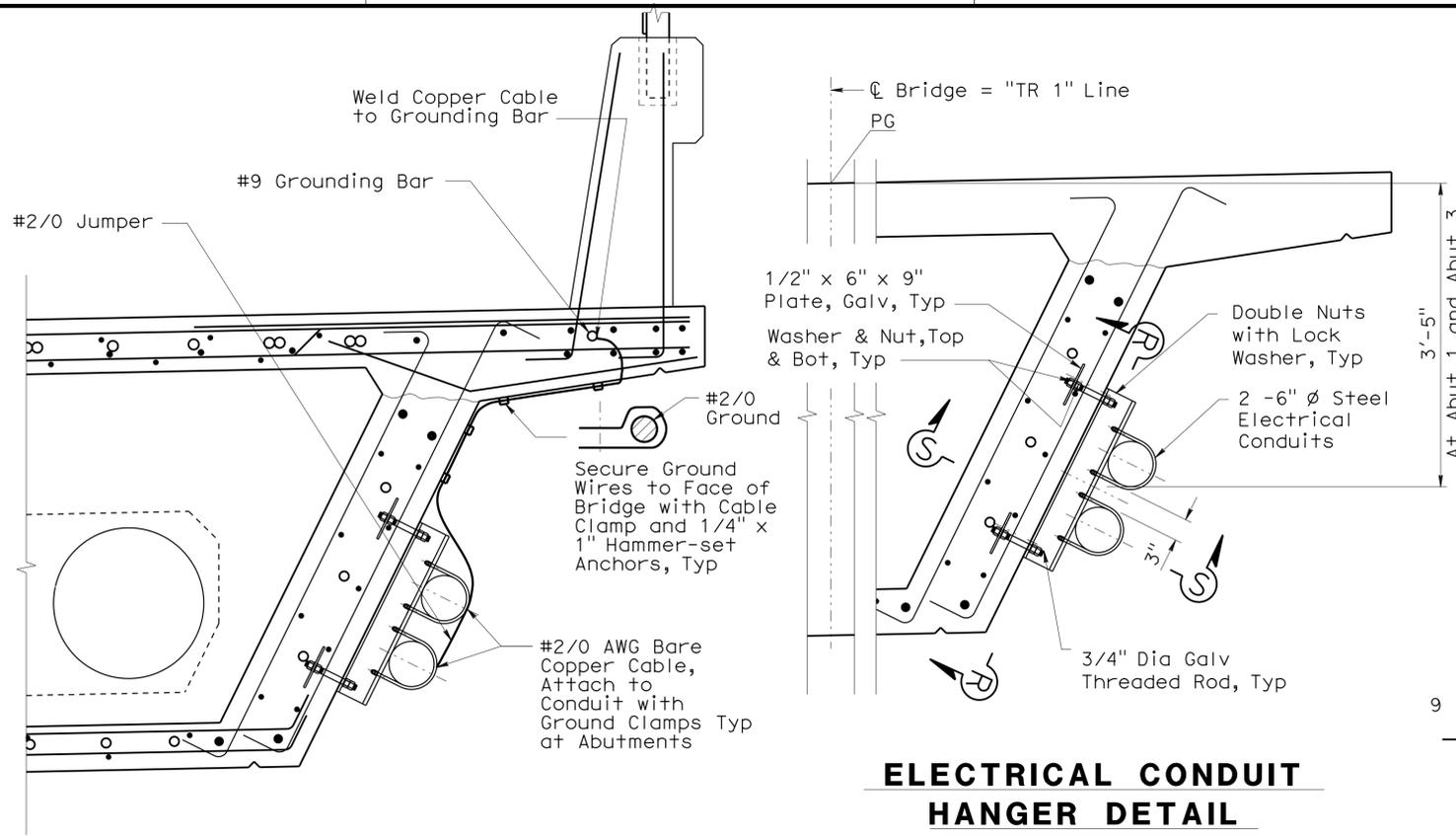
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 OAKLAND, CA 94607

MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831

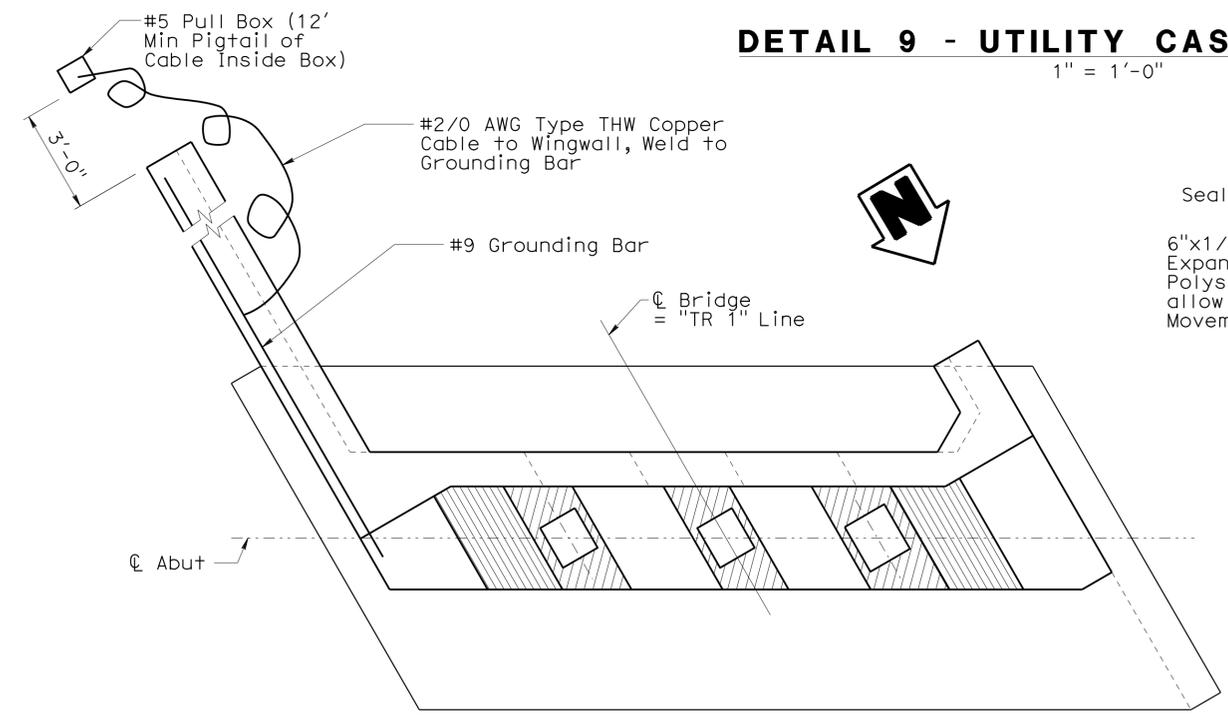
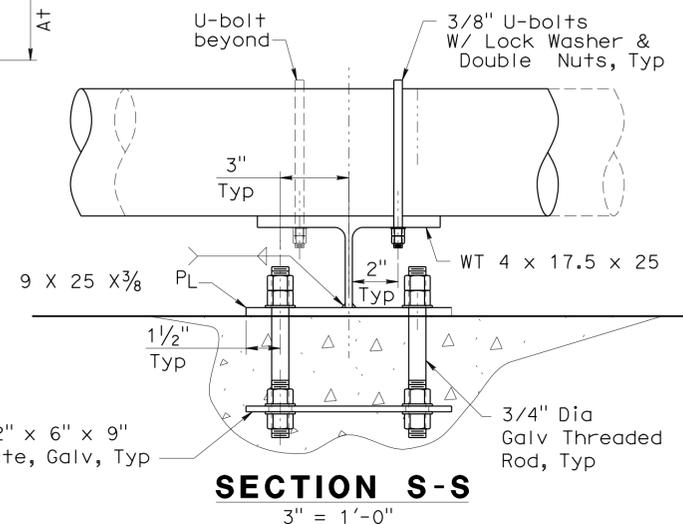


DETAIL 11 - COPPER CABLE TO REBAR CONNECTION
 No Scale



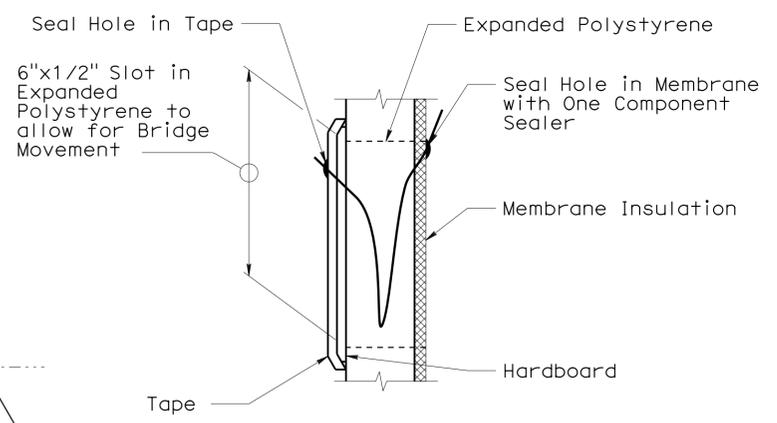
DETAIL 9 - UTILITY CASING GROUND
 1" = 1'-0"

ELECTRICAL CONDUIT HANGER DETAIL
 1" = 1'-0"



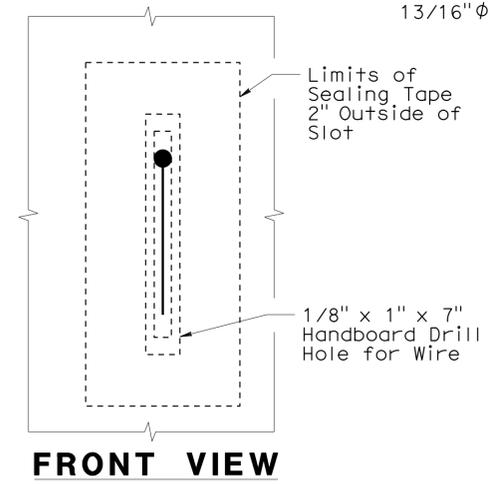
Note: Typical Both Abutments
DETAIL 10 - ABUTMENT GROUNDING PLAN
 3/8" = 1'-0"

Note:
 The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

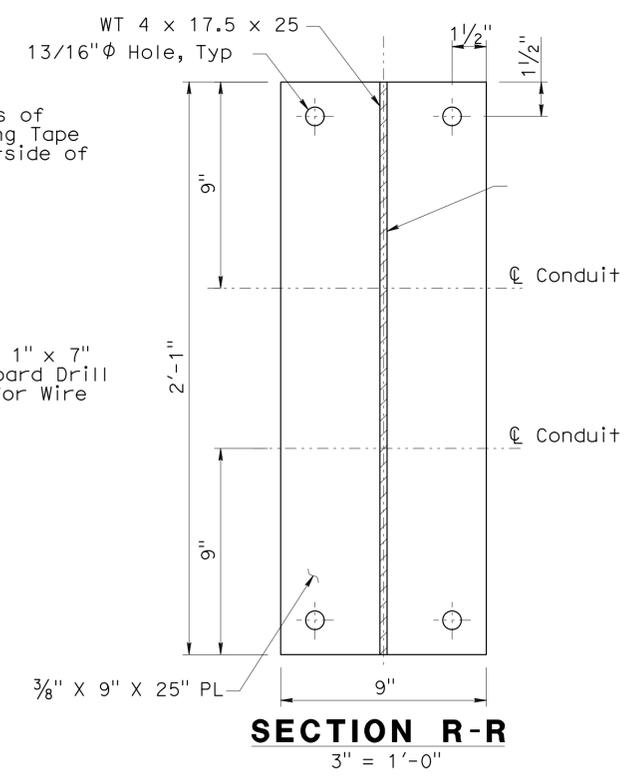


SECTION
DETAIL 12
 No Scale

Note:
 Limits of utility indicates outer limits of all conduits going through an utility opening.



FRONT VIEW



SECTION R-R
 3" = 1'-0"

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
 PROJECT ENGINEER

BRIDGE NO.	N/A
POST MILES	N/A

ARROYO DEL VALLE TRAIL BRIDGE
MISCELLANEOUS DETAILS NO. 2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	780	814

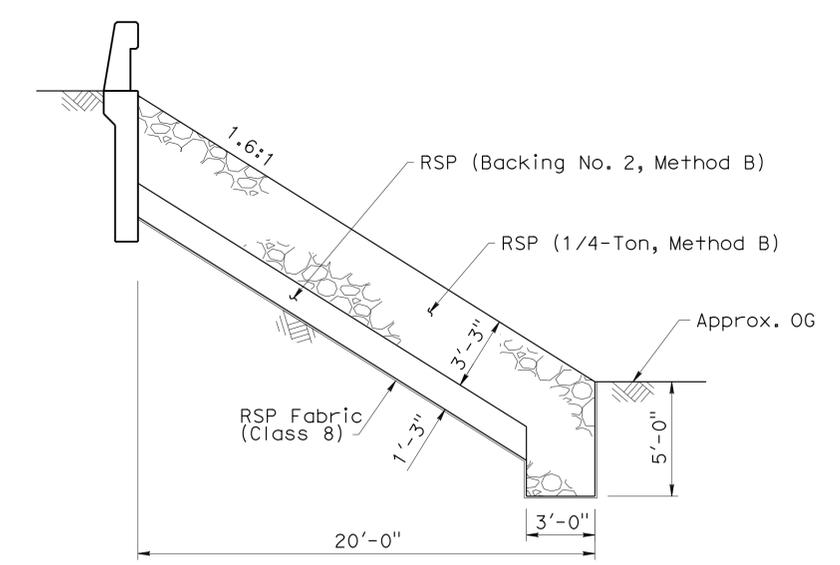
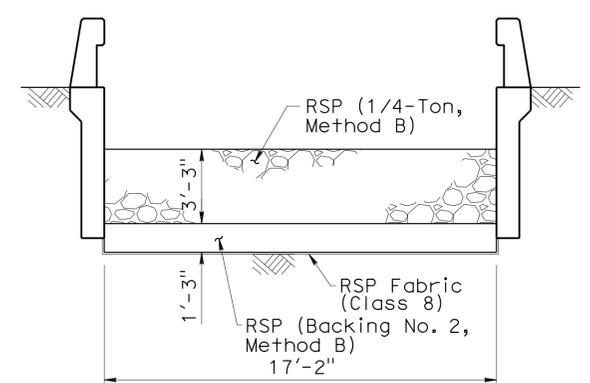
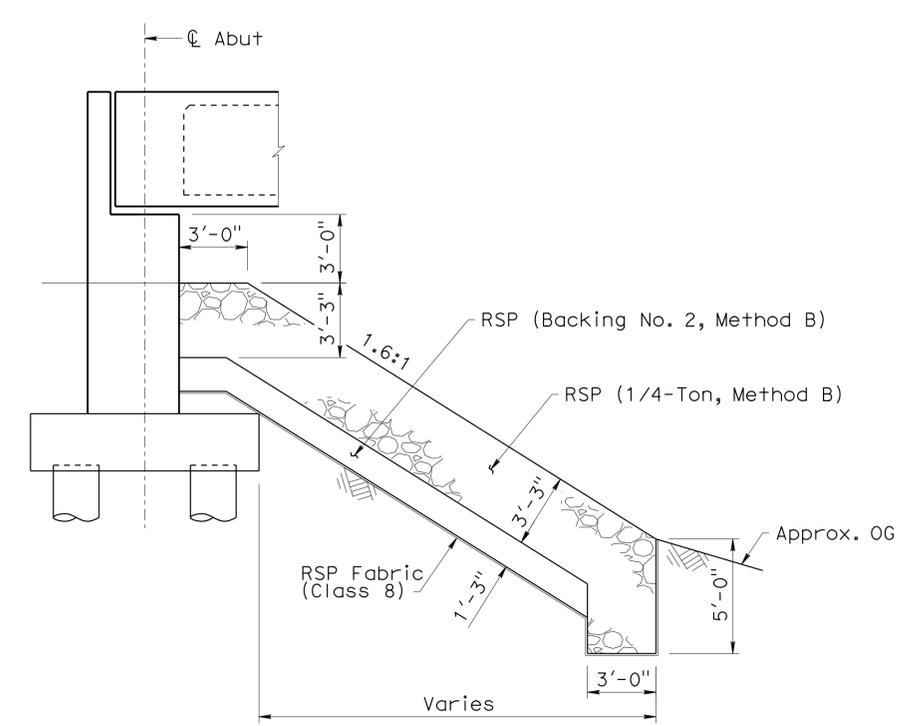
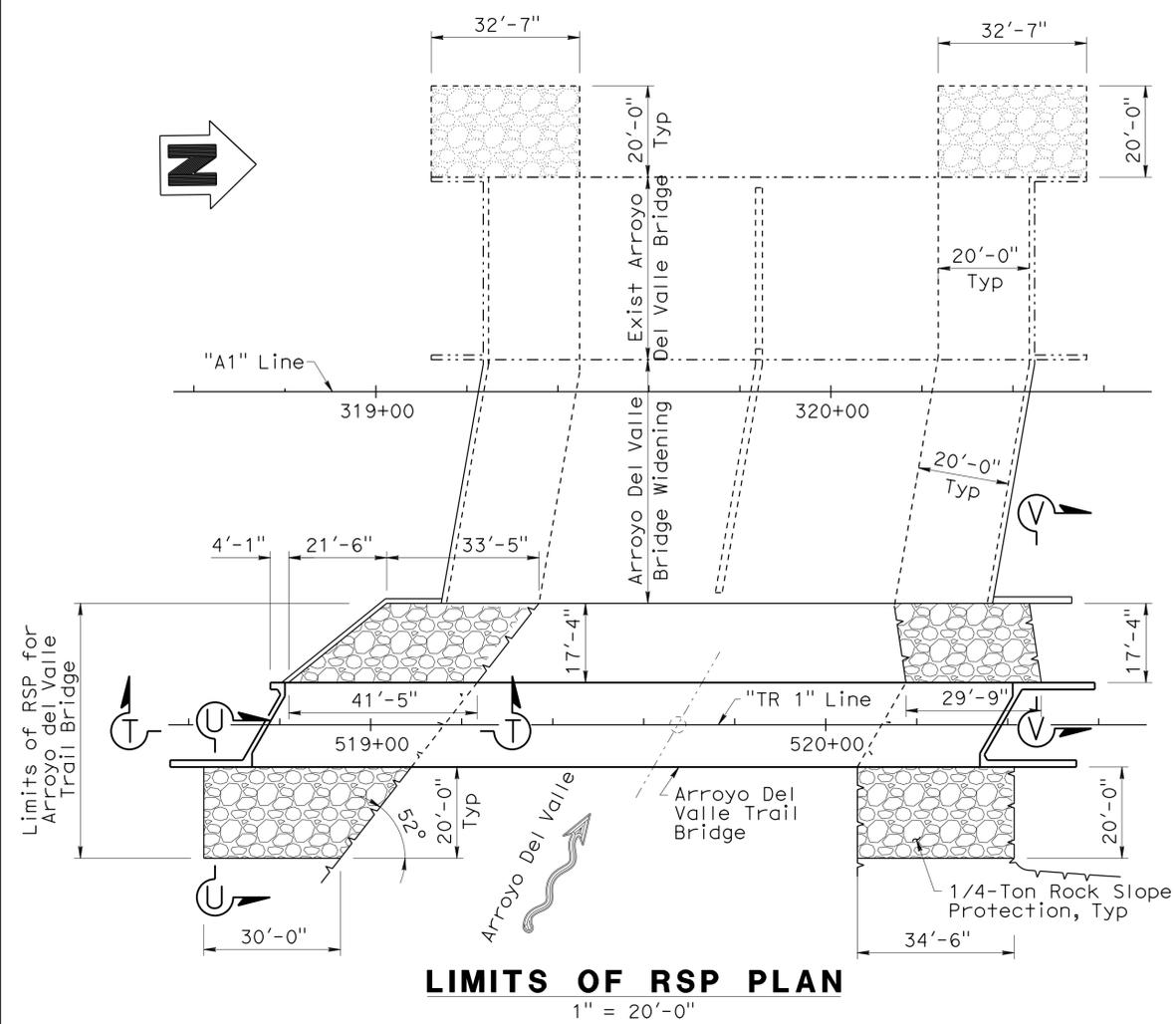
Xiangyang Fu 01/16/15
REGISTERED CIVIL ENGINEER DATE

2-23-15
PLANS APPROVAL DATE

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ALAMEDA COUNTY TRANSPORTATION COMMISSION
1111 BROADWAY, SUITE 800
OAKLAND, CA 94607

MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



David Soon
DESIGN OVERSIGHT
2-23-15
SIGN OFF DATE

DESIGN	BY X. Fu	CHECKED D. Wang
DETAILS	BY K. Wang	CHECKED D. Wang
QUANTITIES	BY R. Huang	CHECKED W. Sennett

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Xiangyang Fu
PROJECT ENGINEER

BRIDGE NO.	N/A
POST MILES	N/A

ARROYO DEL VALLE TRAIL BRIDGE
ROCK SLOPE PROTECTION

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0733
PROJECT NUMBER & PHASE: 4000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
02/09/08 10/27/10 05/27/14 01/16/15	18	19

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	781	814

01/16/15
 GEOTECHNICAL PROFESSIONAL DATE
 Stephen Huang
 No. C 42289
 Exp. 3-31-16
 STATE OF CALIFORNIA
 REGISTERED PROFESSIONAL ENGINEER
 GEOTECHNICAL

2-23-15
 PLANS APPROVAL DATE

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URS CORPORATION
 1333 BROADWAY, SUITE 800
 OAKLAND, CA 94612

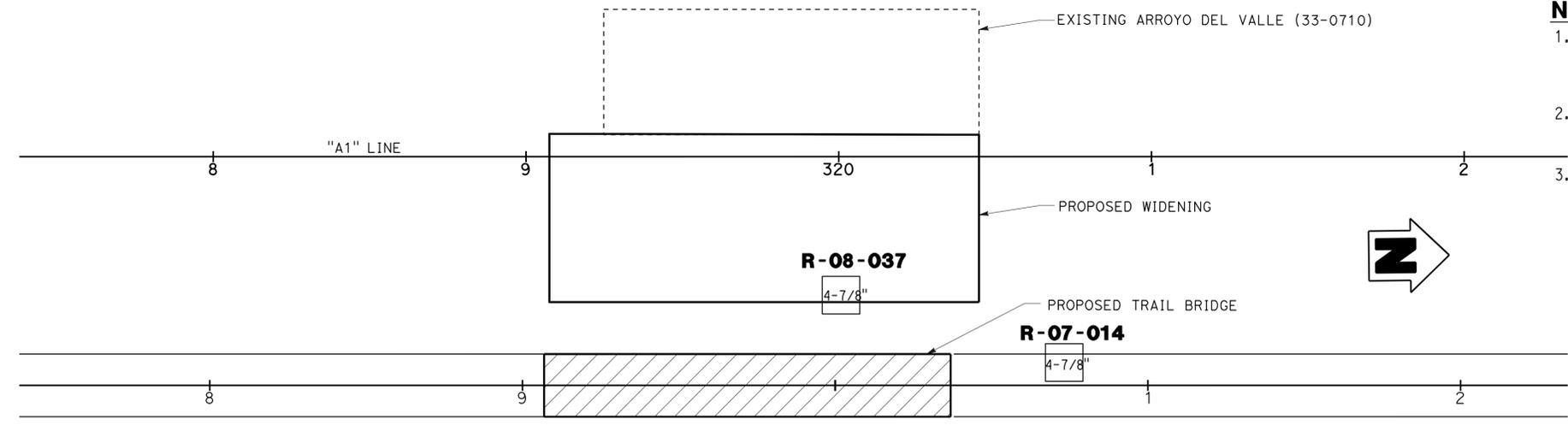
ALAMEDA COUNTY TRANSPORTATION COMMISSION
 1111 BROADWAY, SUITE 800
 OAKLAND, CA 94607

NOTES

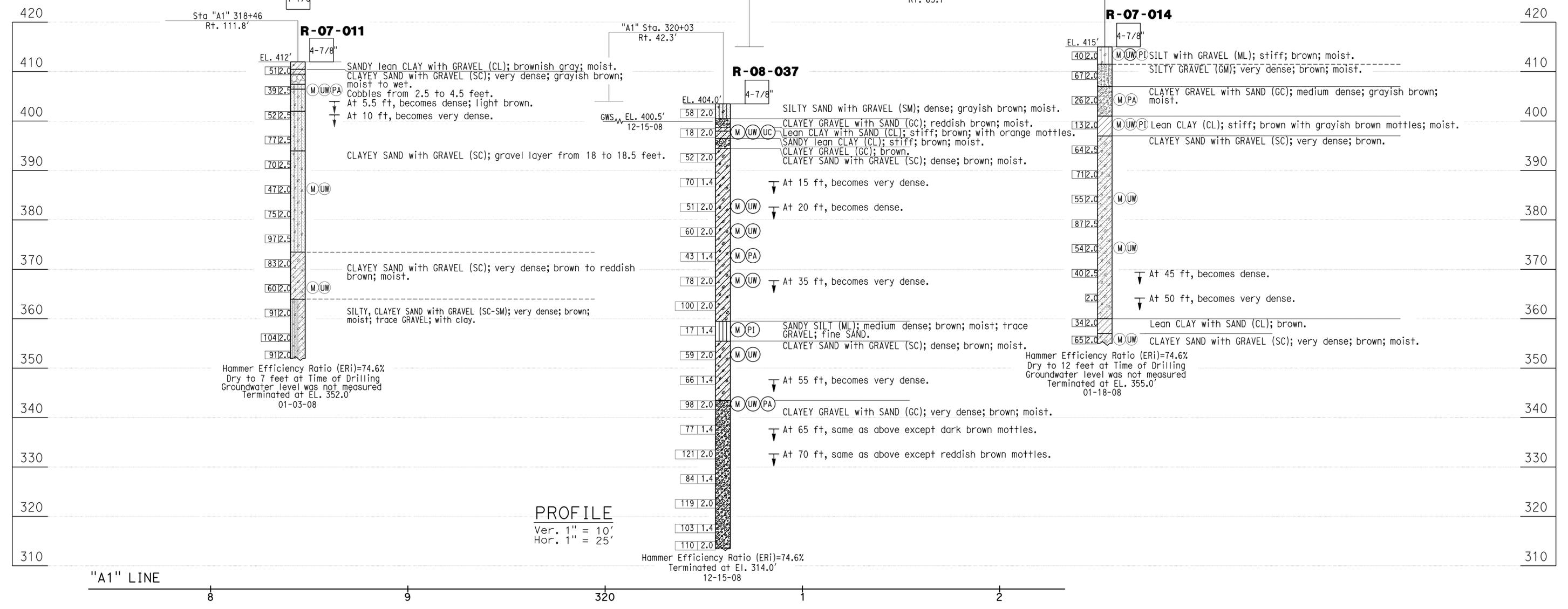
1. This LOTB sheet was prepared in accordance with the Caltrans Soil and Rock Logging, Classification, and Presentation Manual (JUNE 2007)
2. Drilling fluid was measured at EL. 400.5 feet in NB37, 2 days after temporarily stopped drilling.
3. Design groundwater level at EL. 401 feet.

BENCH MARK

All elevations based on vertical datum NAVD88.
 All stations and offsets based on horizontal datum NAD83.
 B.M Elev. 415.27
 Northing: 2063428.6750
 Easting: 6181960.7750
 21#2" brass disk set in concrete in well monument stamped "t", at the intersection of Vineyard Avenue and Ruby Hill Drive



PLAN
 1" = 50'



PROFILE
 Ver. 1" = 10'
 Hor. 1" = 25'

DESIGN OVERSIGHT David Soon 2-23-15 SIGN OFF DATE	DRAWN BY	A. Cheung	C. Rambo	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	Stephen Huang	BRIDGE NO.	N/A	ARROYO DEL VALLE TRAIL BRIDGE LOG OF TEST BORINGS
	CHECKED BY	A. M. Moore	DATE:		Dec 2007-Jan 2008	POST MILES	24.8		
GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)									
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					UNIT: PROJECT NUMBER & PHASE: 0733 04000205811		CONTRACT NO.: 04-297624		DISREGARD PRINTS BEARING EARLIER REVISION DATES
								REVISION DATES	SHEET 19 OF 19

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

GENERAL NOTES

LOAD AND RESISTANCE FACTOR DESIGN

- DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments (November 2011)
- DESIGN LOAD:
 - Soil Pressure: 40 pcf Equivalent Fluid Pressure For Horizontal Backfill
 - Live Load: Surcharge = 240 lb/ft²
 - Vehicular Collision Force: 54 kips transverse force applied at H_e = 32", distributed over 10 feet at the top of wall and 1:1 distribution down and outward. Distribution below footing taken not less than 40'.
- SOIL PARAMETERS:
 - MSE: Internal design $\Phi = 34^\circ$, $\gamma = 120$ lb/ft³
 - External design Φ (Retained Backfill) = 30°, $\gamma = 120$ lb/ft³
 - Φ (Foundation) = 36°, $\gamma = 130$ lb/ft³
 - K_h = 0.23, K_v = 0.0
 - Nominal Bearing Capacity = 18,000 psf
- PRECAST CONCRETE PANELS:
 - f'c = 4,000 psi (Concrete compressive strength at 28 days)
 - fy = 60,000 psi (Yield strength of reinforcement)
- SOIL REINFORCEMENT:
 - Welded wire mats: fy = 65,000 psi (Yield strength)
 - Coupler: fy = 36,000 psi (Yield strength)
 - Corrosion rate = 1.1 mils/year
- REINFORCED CONCRETE:
 - f'c = 3,600 psi, except as noted (Concrete compressive strength at 28 days)
 - fy = 60,000 psi (Yield strength of reinforcement)

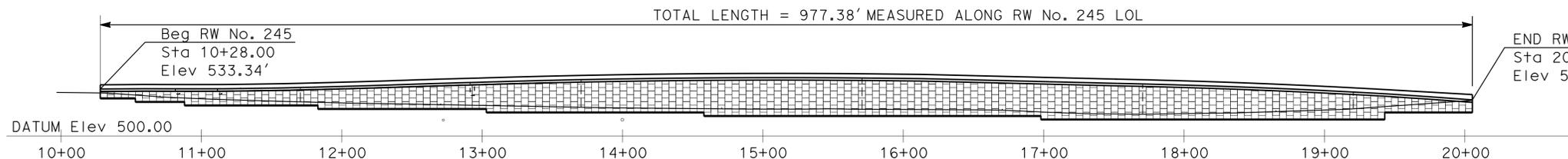
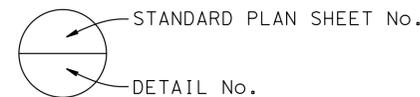
MSE = Mechanically Stabilized Embankment

INDEX TO PLANS

SHEET NO.	TITLE
1	RETAINING WALLS No. 245 - GENERAL PLAN
2	RETAINING WALLS No. 245 - STRUCTURAL PLAN No. 1
3	RETAINING WALLS No. 245 - STRUCTURAL PLAN No. 2
4	RETAINING WALLS No. 245 - STRUCTURAL PLAN No. 3
5	RETAINING WALLS No. 245 - STRUCTURAL PLAN No. 4
6	RETAINING WALLS No. 245 - DETAILS No. 1
7	RETAINING WALLS No. 245 - DETAILS No. 2
8	RETAINING WALLS No. 245 - DETAILS No. 3
9	RETAINING WALLS No. 245 - DETAILS No. 4
10	RETAINING WALLS No. 245 - DETAILS No. 5
11	RETAINING WALLS No. 245 - DETAILS No. 6
12	RETAINING WALLS No. 245 - LOG OF TEST BORINGS 1 of 2
13	RETAINING WALLS No. 245 - LOG OF TEST BORINGS 2 of 2

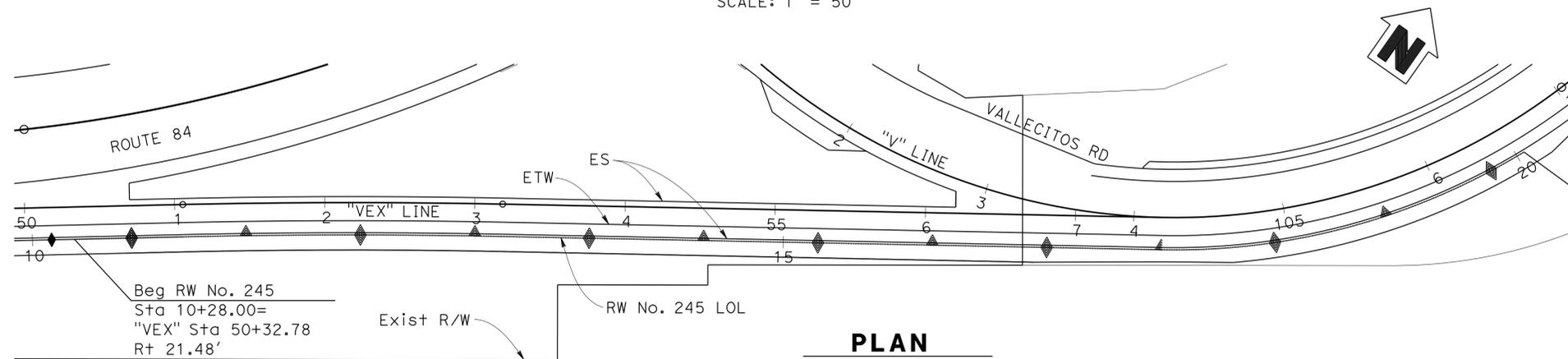
STANDARD PLANS 2010

A10A	ABBREVIATIONS (SHEET 1 OF 2)	RSP B11-56	CONCRETE BARRIER TYPE 736
A10B	ABBREVIATIONS (SHEET 2 OF 2)	RSP D73	DRAINAGE INLETS
A10C	LINES AND SYMBOLS (SHEET 1 OF 3)	D99C	EDGE DRAIN CLEANOUT AND VENT DETAILS
A10D	LINES AND SYMBOLS (SHEET 2 OF 3)		
A10E	LINES AND SYMBOLS (SHEET 3 OF 3)		
A10F	LEGEND - SOIL (SHEET 1 OF 2)		
A10G	LEGEND - SOIL (SHEET 2 OF 2)		



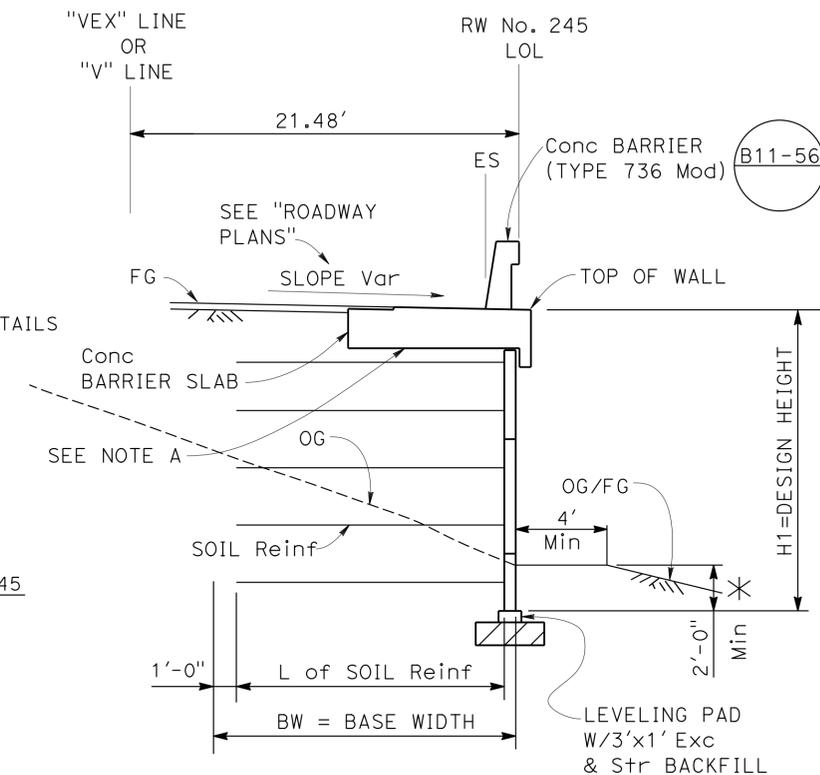
DEVELOPED ELEVATION

SCALE: 1" = 50'



PLAN

SCALE: 1" = 50'



TYPICAL SECTION

SCALE: 1/16" = 1'-0"

* EMBEDMENT MUST BE GREATER OF 2'-0" OR 0.1 x H1

NOTES:

A. For barrier slabs on the low side of a cross slope, the bottom must be built level.

QUANTITIES

MECHANICALLY STABILIZED EMBANKMENT	19,900	SQFT
STRUCTURAL CONCRETE, BARRIER SLAB	480	CY
6" PERFORATED PLASTIC PIPE UNDERDRAIN	850	LF
6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	190	LF
18" WELDED STEEL PIPE (.375" THICK)	70	LF
CONCRETE BARRIER (TYPE 736 MODIFIED)	978	LF

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	ALA	84	22.9/22.7	782	814

REGISTERED CIVIL ENGINEER DATE 12-22-14

PLANS APPROVAL DATE 2-23-15

CHAO GONG
No. No. C53837
Exp. 9-30-15
CIVIL
STATE OF CALIFORNIA

ALAMEDA COUNTY TRANSPORTATION COMMISSION
1111 BROADWAY, SUITE 800
OAKLAND, CA 94607

URS CORPORATION
1333 BROADWAY, SUITE 800
OAKLAND, CA 94612-1924

DESIGN OVERSIGHT
David Soon
2-23-15
SIGN OFF DATE

DESIGN	BY H. HAKIMI	CHECKED G. CARROLL	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: 240 psf Live load surcharge
DETAILS	BY N. HUTTON	CHECKED G. CARROLL	LAYOUT	BY A. BHOI
QUANTITIES	BY H. HAKIMI	CHECKED G. CARROLL	SPECIFICATIONS	BY M. SEDGHI

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

C. GONG
PROJECT ENGINEER

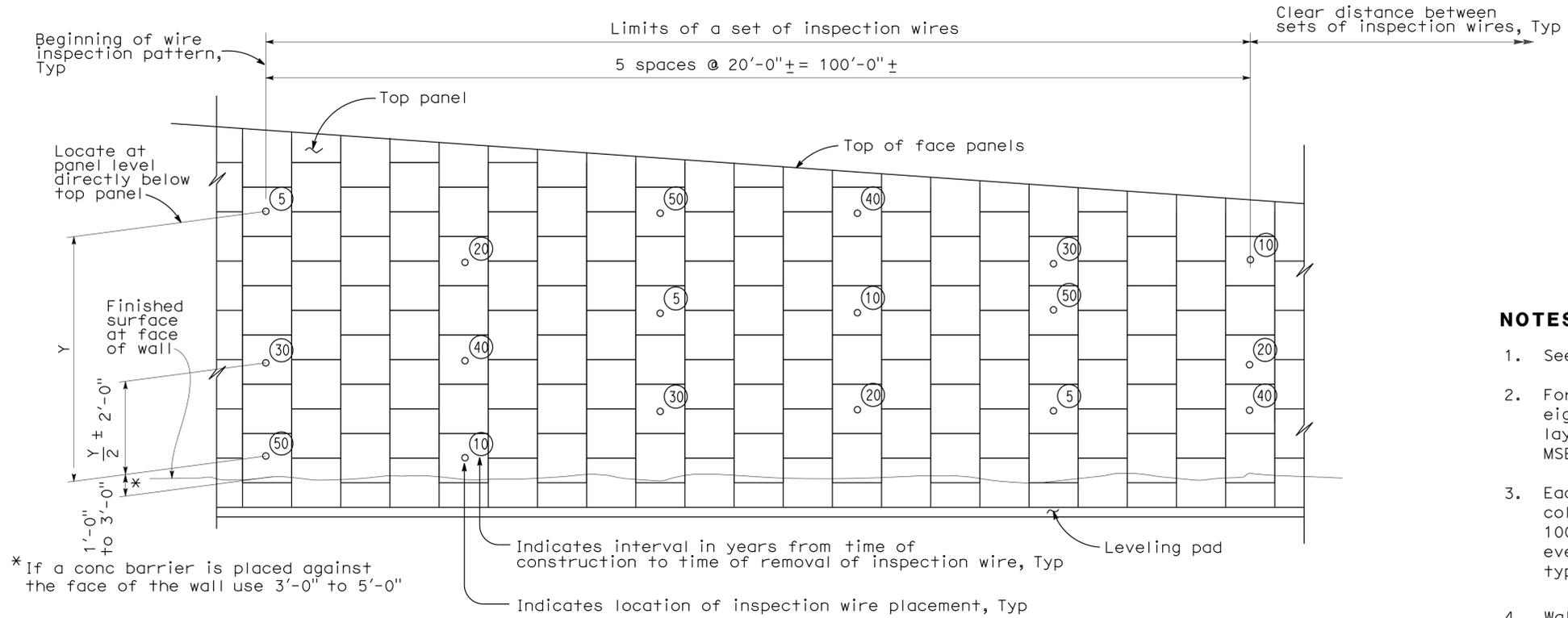
BRIDGE NO. 33E0405
POST MILES 23.3

RETAINING WALL No. 245
GENERAL PLAN

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	ALA	84	22.9/22.7	786	814

REGISTERED CIVIL ENGINEER DATE 12-22-14
 CHAO GONG
 No. No. C53837
 Exp. 9-30-15
 CIVIL
 STATE OF CALIFORNIA
 PLANS APPROVAL DATE 2-23-15
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 OAKLAND, CA 94607
 URS CORPORATION
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 OAKLAND, CA 94612-1924



PART ELEVATION-PATTERN A

NOTES:

1. See sheet "DETAILS No. 3" for additional details.
2. For walls with a design height greater than 17 feet, a set of eighteen inspection wires are required as shown on the typical layout. Sets of inspection wires along the LOL of a single MSE wall must be spaced no greater than 500 feet apart.
3. Each set of eighteen inspection wires must be placed in six columns spaced every four panels (20 feet apart) across the 100 foot long segment. Each column must be approximately evenly distributed vertically and numbered according to the typical layout shown.
4. Walls which do not meet the design height requirement in Note 2 must have a minimum of 6 inspection wires spaced at a maximum of every four panels (20 feet apart) across a length of wall segment not to exceed 100 feet. Similar to Note 2, sets of inspection wires along the LOL of a single MSE wall must be spaced no greater than 500 feet apart.
5. Inspection wires must be installed in a location that will be exposed above finished grade following the completion of the wall.
6. When there is at least 12ft space in front of the MSE wall face panel, inspection wires sets must be optimized such that a set of inspection wires is located at areas of maximum wall height and such that an inspection wire set begins within 20 feet of each end of the wall.
7. Refer to "STRUCTURAL PLAN No. 1" and "STRUCTURAL PLAN No. 3" sheets for location of wall segments where inspection wire placement is planned to be installed.

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY H. HAKIMI	CHECKED G. CARROLL
DETAILS	BY N. HUTTON	CHECKED G. CARROLL
QUANTITIES	BY H. HAKIMI	CHECKED G. CARROLL

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

C. GONG
 PROJECT ENGINEER

BRIDGE NO.	33E0405
POST MILES	23.3

RETAINING WALL No. 245
STRUCTURAL PLAN No. 4

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811

CONTRACT NO.: 04-297624

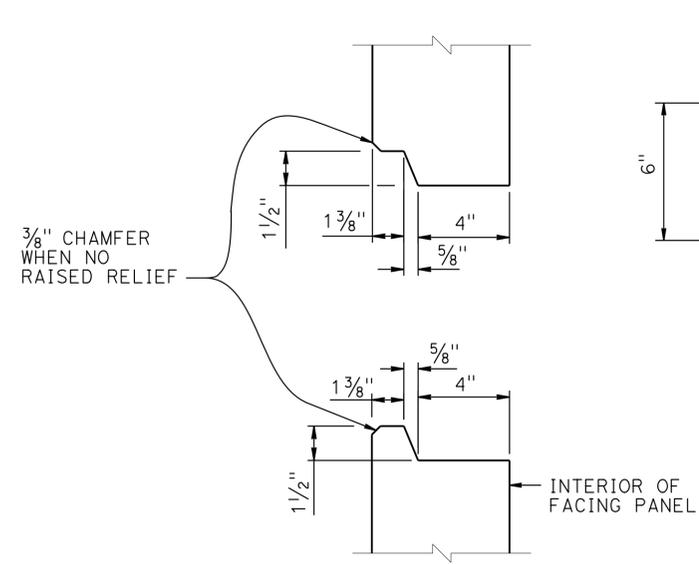
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
12-22-14	5	13

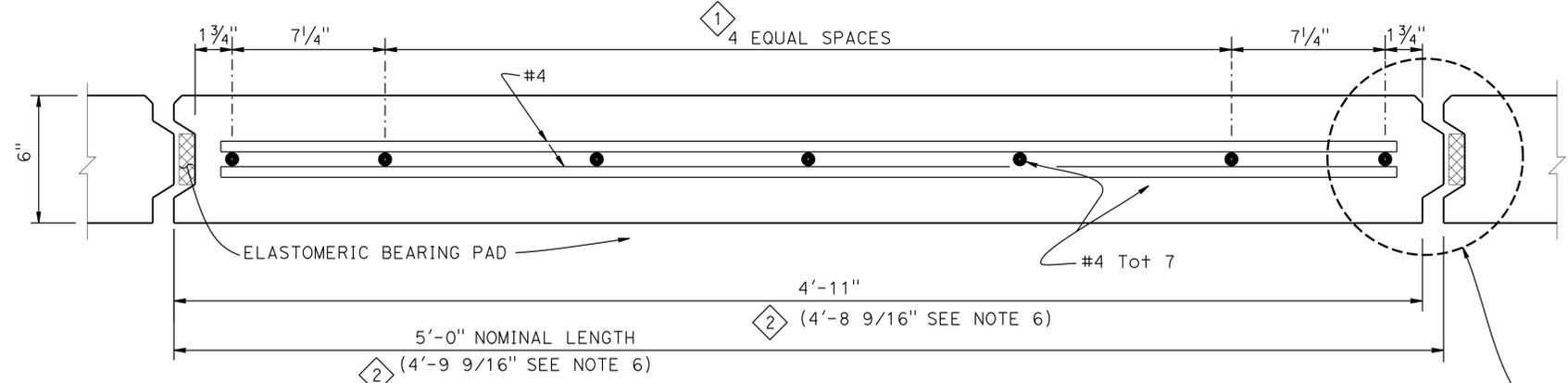
FILE => 33E0405-g-rw245_1o04.dgn

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	ALA	84	22.9/22.7	787	814
			12-22-14	DATE	
			2-23-15	PLANS APPROVAL DATE	
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ALAMEDA COUNTY TRANSPORTATION COMMISSION 1111 BROADWAY, SUITE 800 OAKLAND, CA 94607					
URS CORPORATION 1333 BROADWAY, SUITE 800 OAKLAND, CA 94612-1924					

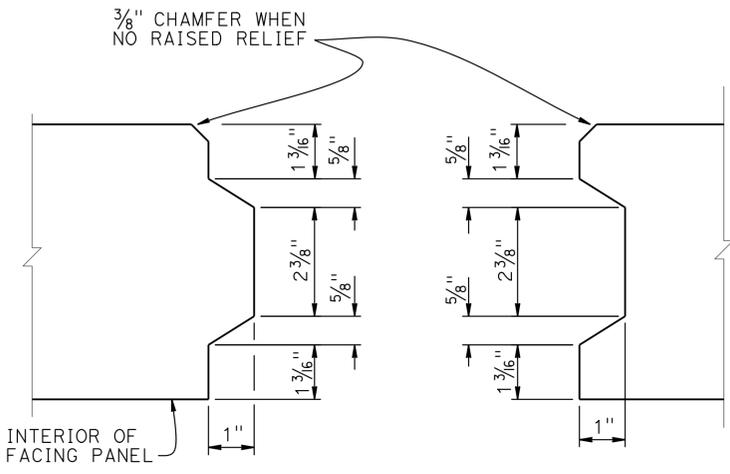


HORIZONTAL JOINT DETAIL
3" = 1'-0"

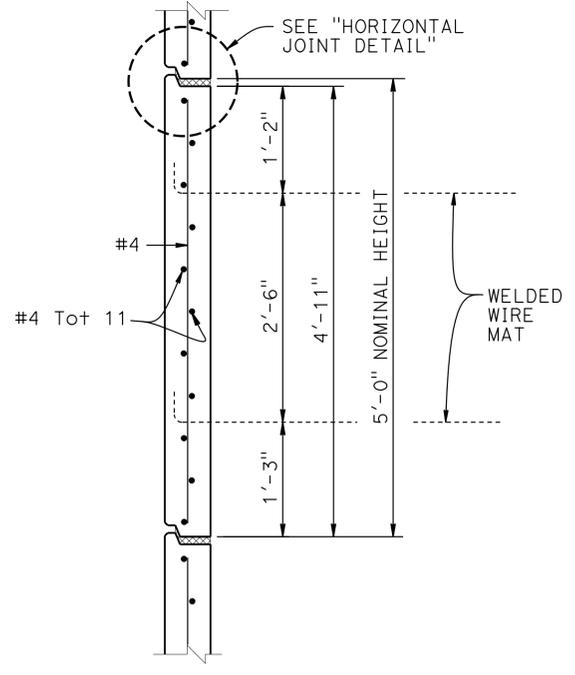


PLAN - FACING PANEL
3" = 1'-0"

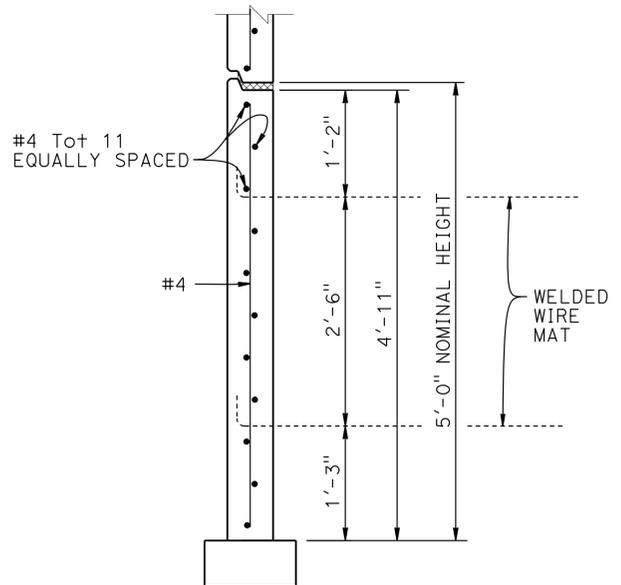
- NOTES:
- Architectural treatment not shown
 - Place reinforced elastomeric bearing pads in all of the panel joints between the panels. Place one in each vertical joint where the horizontal joints intersect. Place two per panel in each horizontal joint:
 $\frac{3}{4}$ " x $2\frac{3}{8}$ " x 6" for vertical joints
 $\frac{3}{4}$ " x 4" x 6" for horizontal joints
 - Bond a strip of filter fabric, 1'-0" wide, over the full length of all panel joints
 - Top layer of welded wire mats attached parallel to top of panel when top of wall is angled or curved as shown elsewhere in "STRUCTURE PLANS"
 - Eliminate mid level mat when closer than 6" to top mat, continue variable dimension between remaining mats
 - From Station 19+43.00 to End of Wall, facing panels must have adjusted dimensions as shown



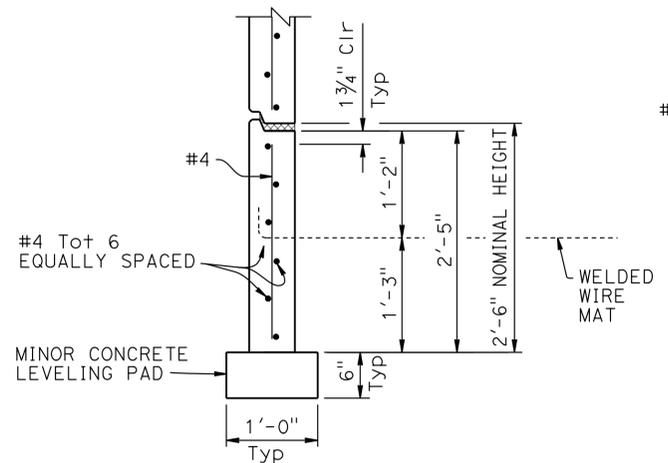
VERTICAL JOINT DETAIL
6" = 1'-0"



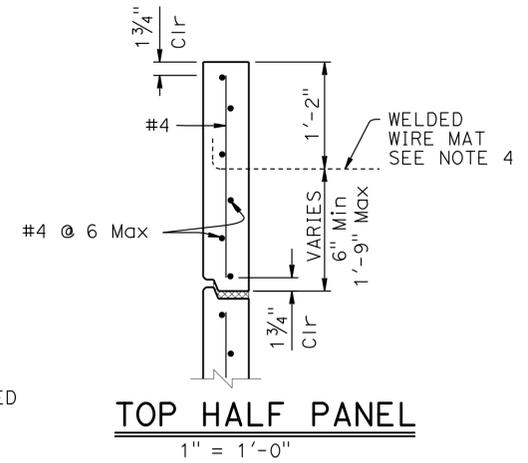
INTERMEDIATE PANEL
1" = 1'-0"



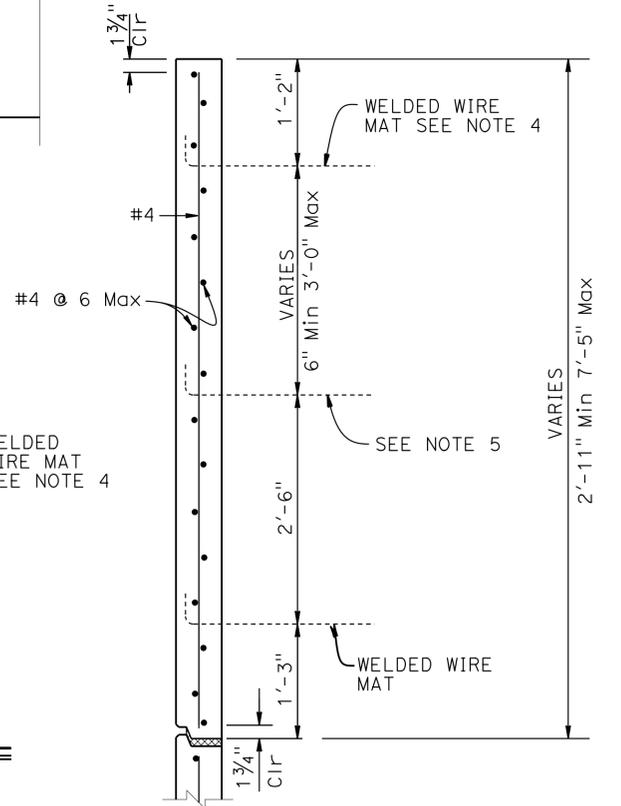
BOTTOM PANEL
1" = 1'-0"



BOTTOM HALF PANEL
1" = 1'-0"



TOP HALF PANEL
1" = 1'-0"



TOP PANEL WITH MULTIPLE MATS
1" = 1'-0"

RETAINING WALL No. 245

MECHANICALLY STABILIZED EMBANKMENT

DETAILS No. 1

STANDARD DRAWING	1 REVISED TEXT
FILE NO. xs13-020-1	2 REVISED DIMENSIONS
APPROVAL DATE July 2014	

STATE OF CALIFORNIA	
DEPARTMENT OF TRANSPORTATION	
BRIDGE NO. 33E0405	
POST MILES 23.3	

DIVISION OF ENGINEERING SERVICES	
PROJECT NUMBER & PHASE: 04000205811	
CONTRACT NO.: 04-297624	

REVISION DATES	SHEET 6 OF 13
12-22-14	
2-23-15	
9-30-15	
11-17-14	

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	ALA	84	22.9/22.7	788	814
			12-22-14	REGISTERED CIVIL ENGINEER DATE	
			2-23-15	PLANS APPROVAL DATE	
REGISTERED PROFESSIONAL ENGINEER CHAO GONG No. No. C53837 Exp. 9-30-15 CIVIL STATE OF CALIFORNIA					
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URS CORPORATION 1333 BROADWAY, SUITE 800 OAKLAND, CA 94612-1924					

GENERAL NOTES LOAD & RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments

LIVE LOAD: Surcharge = 240 lb/ft²

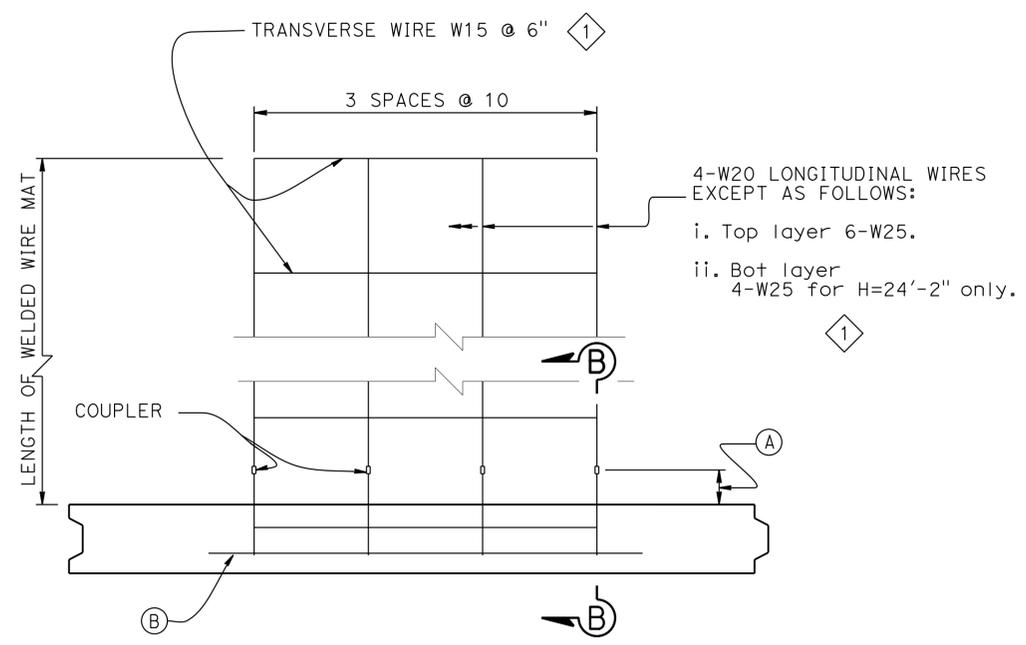
SOIL PARAMETERS:
 Internal design $\phi = 34^\circ, \gamma = 120 \text{ lb/ft}^3$
 External design ϕ (Retained Backfill) = $30^\circ, \gamma = 120 \text{ lb/ft}^3$
 ϕ (Foundation) = 30°
 $k_h = 0.23$

PRECAST CONCRETE PANELS:
 $f'_c = 4,000 \text{ psi}$ (Concrete compressive strength at 28 days)
 $f_y = 60,000 \text{ psi}$ (Yield strength of reinforcement)

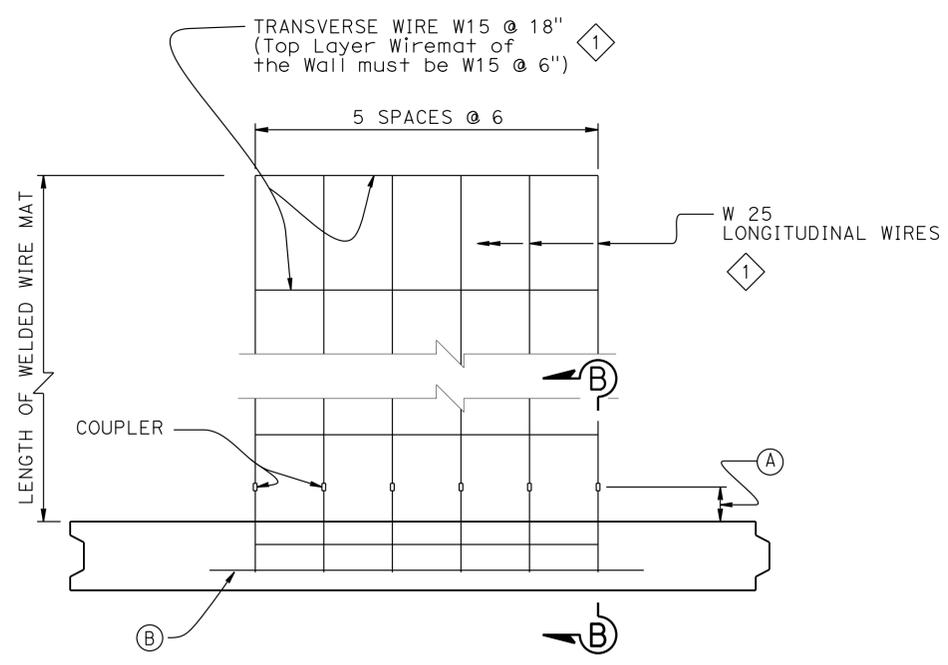
SOIL REINFORCEMENT:
 Welded wire mats: $f_y = 65,000 \text{ psi}$ (Yield strength)
 Coupler: $f_y = 36,000 \text{ psi}$ (Yield strength)
 Corrosion rate = 1.1 mils/year

REINFORCED CONCRETE:
 $f'_c = 3,600 \text{ psi}$, except as noted
 (Concrete compressive strength at 28 days)
 $f_y = 60,000 \text{ psi}$ (Yield strength of reinforcement)

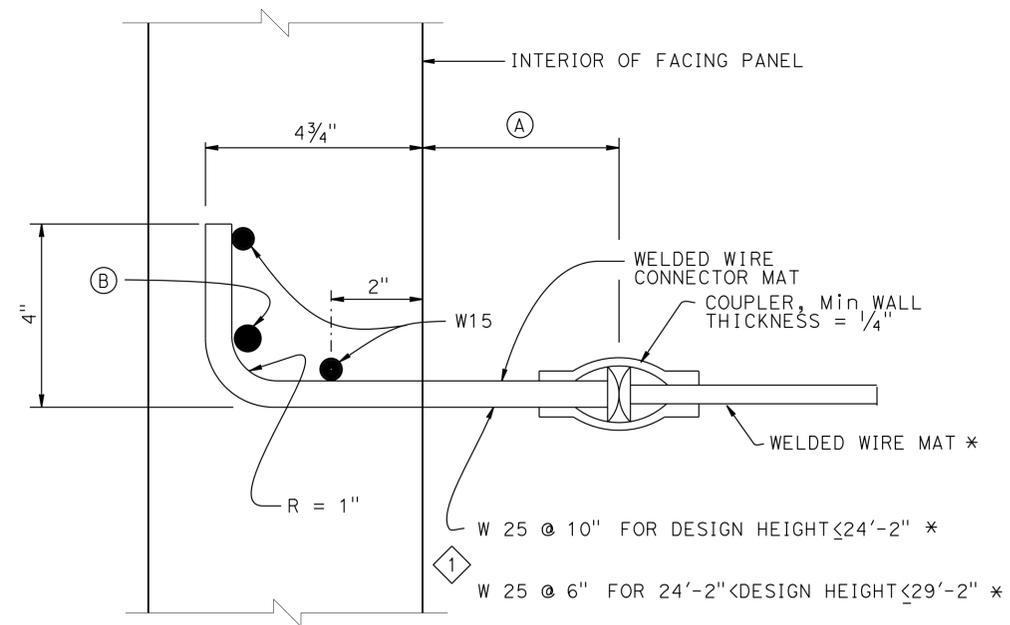
MSE = Mechanically Stabilized Embankment



**PLAN OF PANEL WITH DESIGN HEIGHT
DESIGN HEIGHT $\leq 24'-2''$**
 $1\frac{1}{2}'' = 1'-0''$



**PLAN OF PANEL WITH
DESIGN HEIGHT = 26'-8''**
 $1\frac{1}{2}'' = 1'-0''$



SECTION B-B
 $6'' = 1'-0''$

- NOTES:
- (A) Distance as required to permit coupler to be swaged
 - (B) Place #4 x 3'-2", centered on connector mat, but not welded to it
 - (C) All transverse wires size W15 at various spacing as shown elsewhere in plans
 - (D) Size of longitudinal wires shown elsewhere in plans

- 1 REVISED PLAN OF PANELS & SECTION B
- 2 REVISED GENERAL NOTES MOVED TO GENERAL PLAN
- 3 REVISED NOTES

REVISED STANDARD DRAWING
 xs13-020-2
 APPROVAL DATE July 2014

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

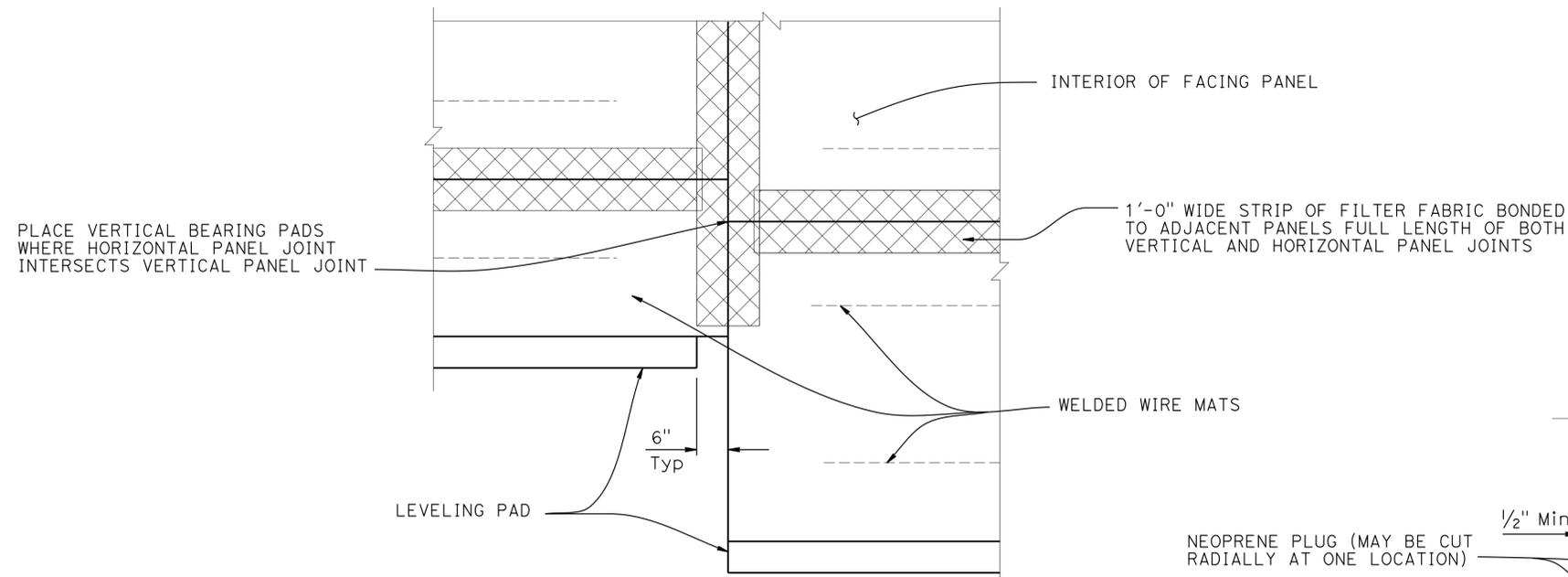
BRIDGE NO.
33E0405
 POST MILES
23.3

RETAINING WALL No. 245
MECHANICALLY STABILIZED EMBANKMENT
DETAILS No. 2

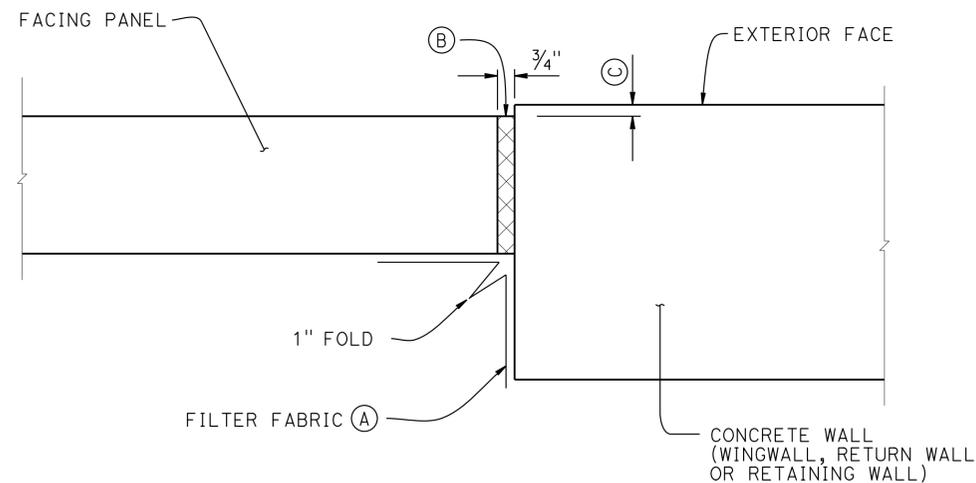
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	ALA	84	22.9/22.7	789	814

12-22-14
 REGISTERED CIVIL ENGINEER DATE
 2-23-15
 PLANS APPROVAL DATE
 CHAO GONG
 REGISTERED PROFESSIONAL ENGINEER
 No. No. C53837
 Exp. 9-30-15
 CIVIL
 STATE OF CALIFORNIA

ALAMEDA COUNTY TRANSPORTATION COMMISSION
 1111 BROADWAY, SUITE 800
 OAKLAND, CA 94607
 URS CORPORATION
 1333 BROADWAY, SUITE 800
 OAKLAND, CA 94612-1924



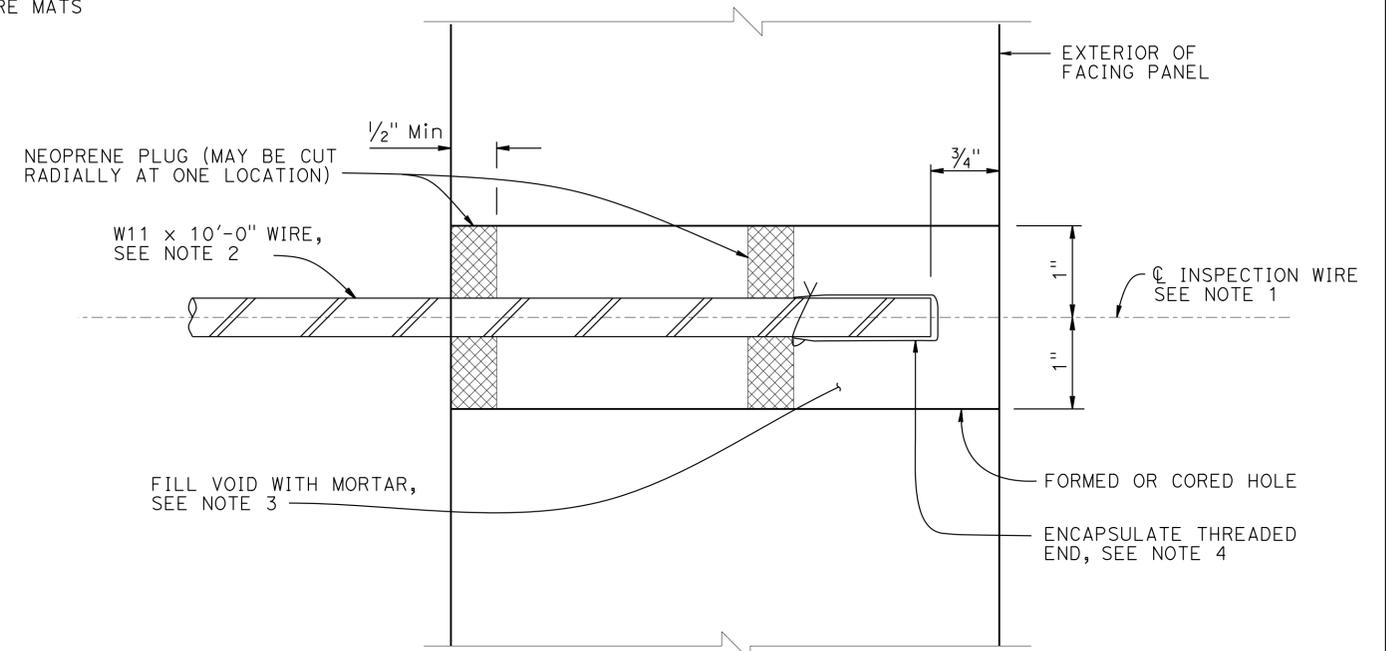
PART ELEVATION
 $\frac{3}{4}'' = 1'-0''$



MSE FACING PANEL-TO-CONCRETE WALL JOINT DETAIL
 $3'' = 1'-0''$

NOTES:

- (A) Bond a strip of filter fabric, 1'-6" wide, to back of MSE panels and the adjacent concrete wall for entire length of vertical joint
- (B) Bond expansion joint material to the concrete wall
- (C) Offset between face of MSE facing panel and face of the concrete wall as dictated by location of layout lines shown elsewhere in "STRUCTURE PLANS"



SECTION THRU INSPECTION WIRE
 NO SCALE

NOTES:

- 1. Center inspection wire in facing panel.
- 2. Fabricated inspection wire from W11 wire representative of the welded wire mats, with $\frac{3}{8}'' \text{ } \phi$ 16 UNC threads for at least $1\frac{1}{2}''$ of one end.
- 3. Place inspection wire horizontal and perpendicular to the wall panel prior to backfilling.
- 4. Encapsulate threaded end with corrosion inhibiting mastic, vinyl covering, and secure with plastic tie.

UNC = Unified Coarse Threads

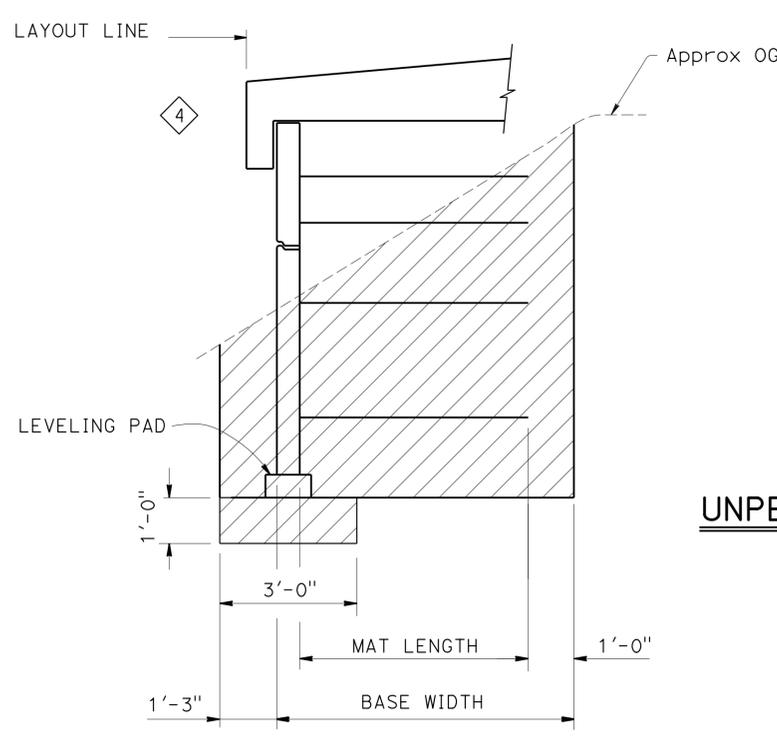
STANDARD DRAWING	
FILE NO. xs13-020-3	APPROVAL DATE <u>July 2014</u>

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	
-----------------------------------------------------	--

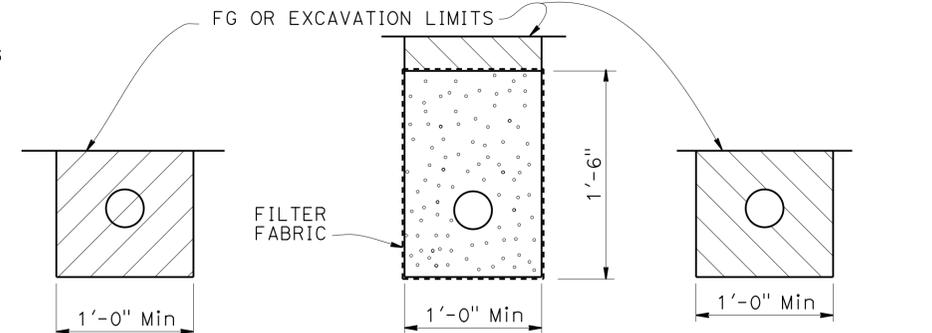
DIVISION OF ENGINEERING SERVICES	
BRIDGE NO. 33E0405	POST MILES 23.3

RETAINING WALL No. 245	
MECHANICALLY STABILIZED EMBANKMENT	
DETAILS No. 3	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	ALA	84	22.9/22.7	790	814
REGISTERED CIVIL ENGINEER			DATE	1-5-15	
PLANS APPROVAL DATE			2-23-15		
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URS CORPORATION 1333 BROADWAY, SUITE 800 OAKLAND, CA 94612-1924					



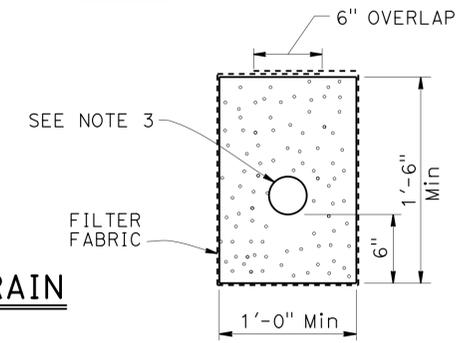
LIMITS OF EXCAVATION
1/2" = 1'-0"



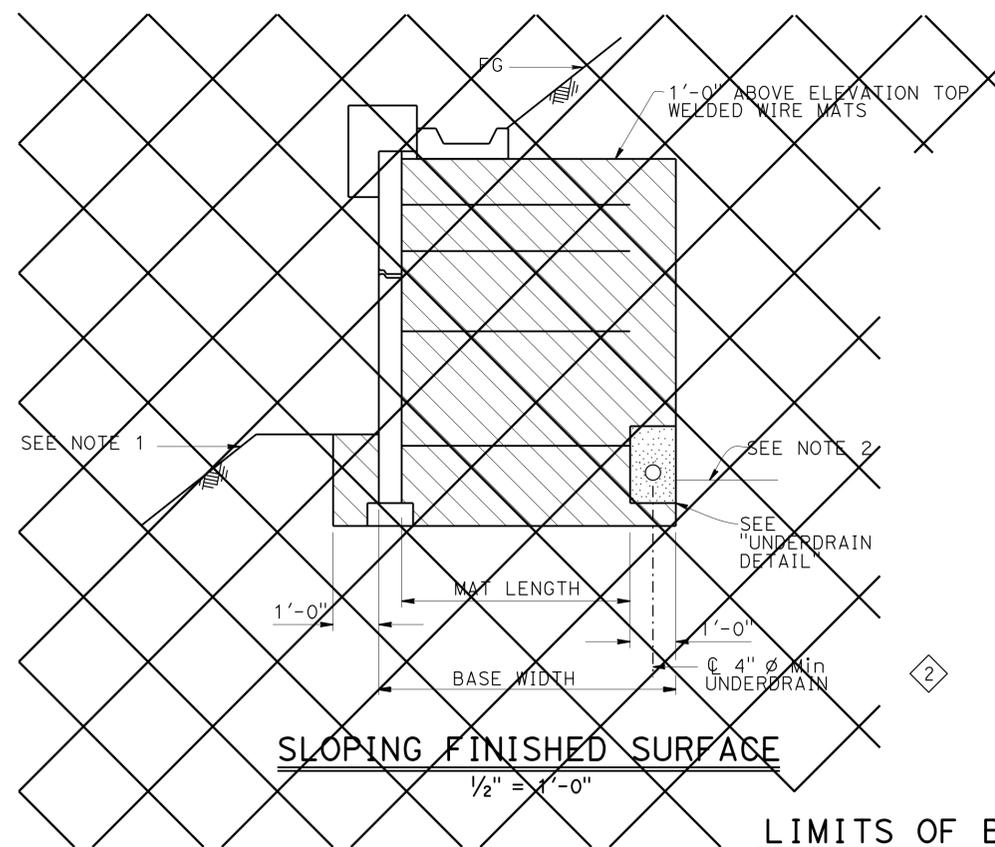
EXCAVATION BACKFILL
UNPERFORATED OUTLET OR CLEAN OUT PIPE FOR UNDERDRAIN
NO SCALE

LEGEND:

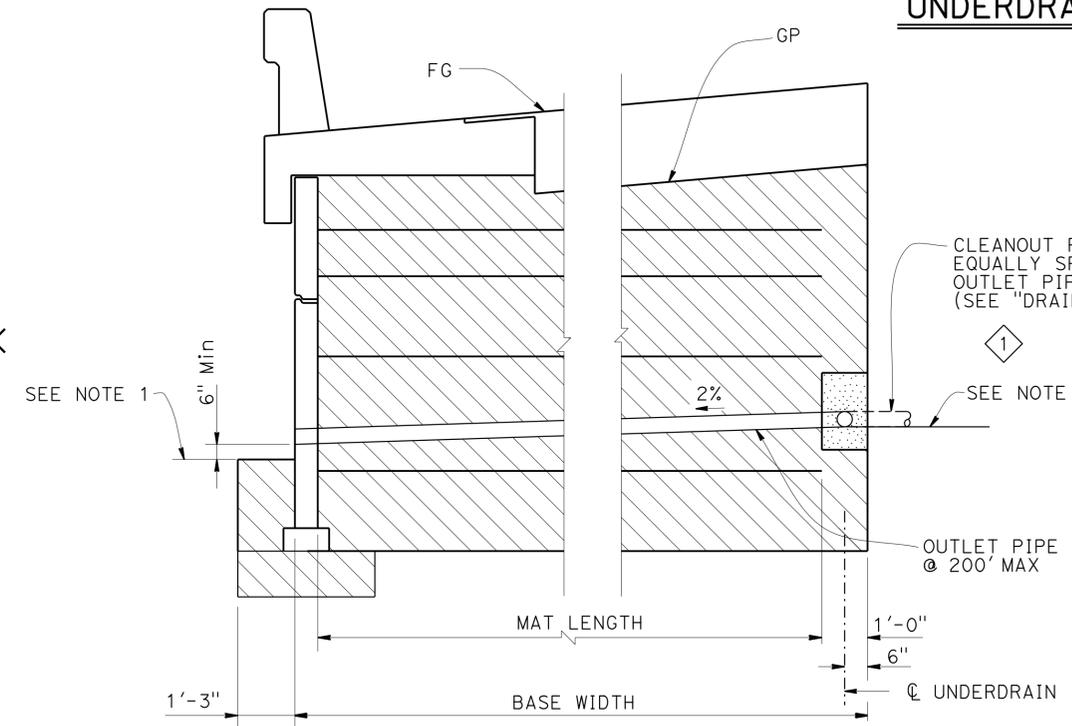
- [Hatched Box] Limits of Structure Excavation
- [Hatched Box] Limits of Structure Backfill
- [Dotted Box] Limits of Permeable Material



UNDERDRAIN DETAIL

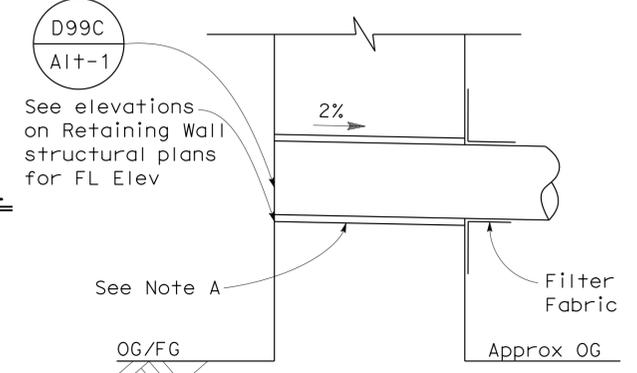


SLOPING FINISHED SURFACE
1/2" = 1'-0"
LIMITS OF BACKFILL



ROADWAY SECTION
1/2" = 1'-0"

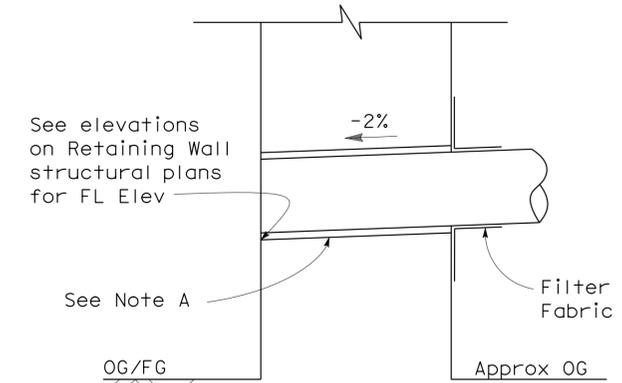
- NOTES:**
- Limits to FG except to GP when in roadway section
 - Locate underdrain behind bottom level of welded wire mats wherever possible, or at elevation needed to drain, as shown elsewhere on plans
 - Place perforated pipe underdrain of diameter shown elsewhere on plans or minimum 4" ϕ smoothed wall PVC or minimum 8" ϕ corrugated HDPE
 - Maximum spacing of outlet pipe is 200 feet
 - At sags in profile of underdrain, install outlet pipe for each direction of flow



SECTION

- NOTES:**
- Place 6" diameter non-perforated plastic pipes for cleanout pipes as shown on Structural Plans. Exposed wall pipes must be located 6 inches minimum above grade.

CLEANOUT PIPE DETAIL
NO SCALE



SECTION

- NOTES:**
- Place 6" diameter non-perforated plastic pipes as shown on Structural Plans. Exposed wall drains must be located 6 inches minimum above grade.

OUTLET PIPE DETAIL
NO SCALE

STANDARD DRAWING

FILE NO. **xs13-020-6**

APPROVAL DATE July 2014

- 1 REVISED UNDERDRAIN LOCATION AND ADDED RUN-OFF
- 2 DOES NOT APPLY
- 3 ADDED OUTLET/CLEANOUT PIPE DETAIL
- 4 REPLACED COPING BY BARRIER SLAB

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.	33E0405
POST MILES	23.3

RETAINING WALL No. 245

MECHANICALLY STABILIZED EMBANKMENT

DETAILS No. 4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	ALA	84	22.9/22.7	791	814
			12-22-14	REGISTERED CIVIL ENGINEER DATE	
			2-23-15	PLANS APPROVAL DATE	
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URS CORPORATION 1333 BROADWAY, SUITE 800 OAKLAND, CA 94612-1924					

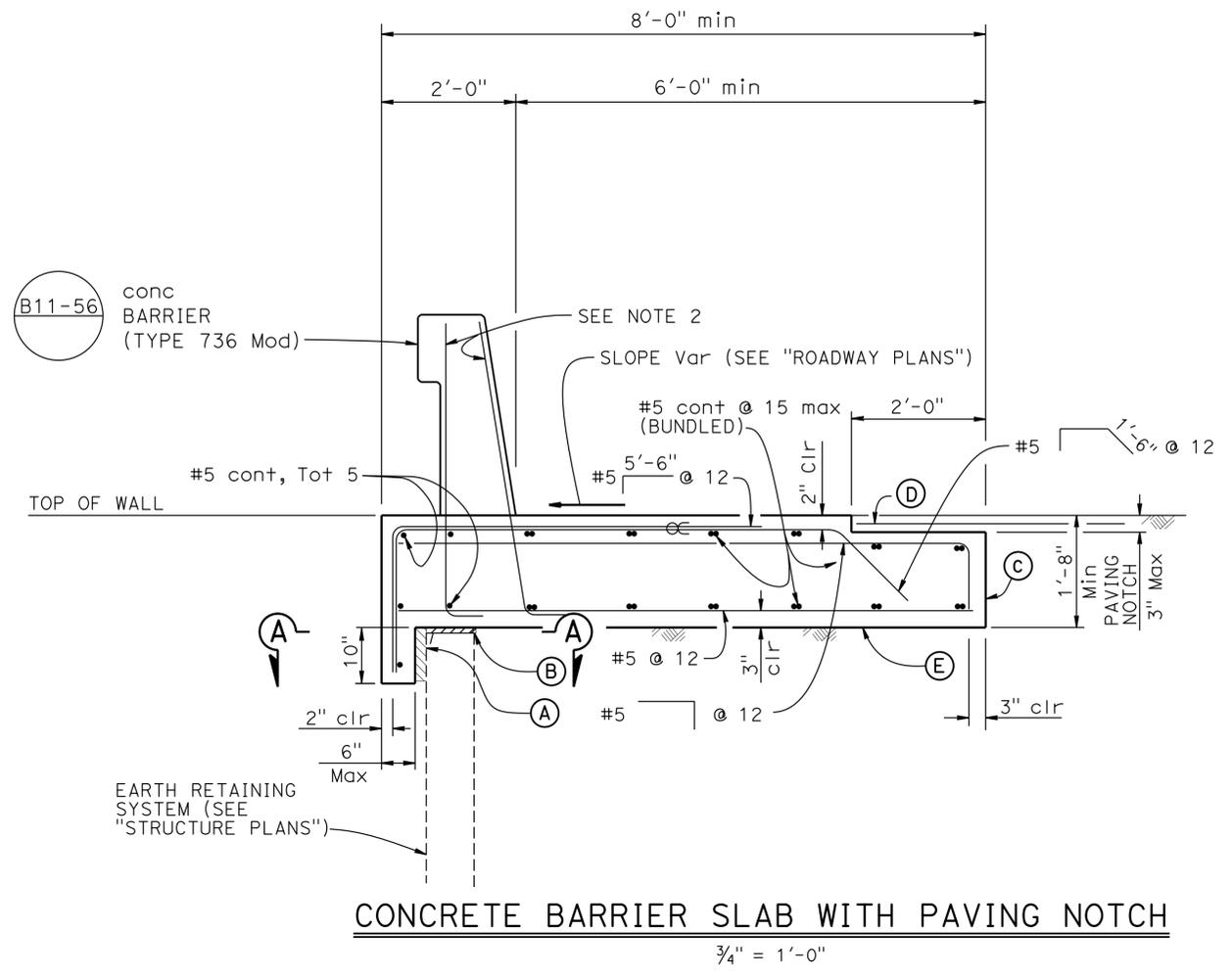
DESIGN DATA

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments.

F_t : 54 kips on barrier
 EQE: k_h = 0.23
 k_v = 0.0

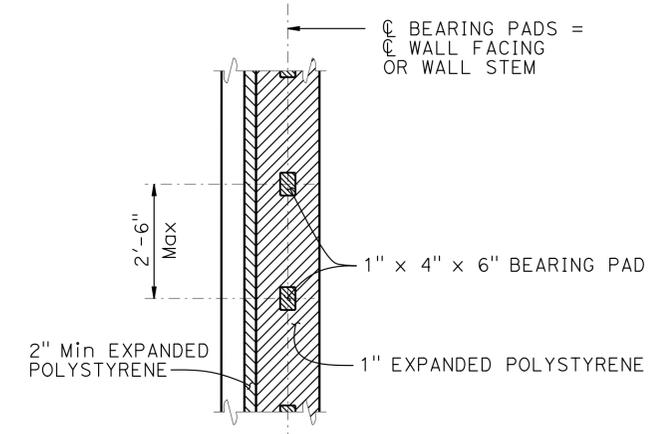
REINFORCED CONCRETE: f'_c = 3600 psi
 f_y = 60 ksi
 n = 8

- NOTES:
1. Clearance to reinforcing steel in concrete barrier to be 1".
 2. Not all barrier reinforcement shown.
 3. No expansion joints in concrete barrier or barrier slab within wall limits.
 4. Minimum slab length: 40 ft



CONCRETE BARRIER SLAB WITH PAVING NOTCH
 3/4" = 1'-0"

- NOTES:
- (A) 2" Min Expanded polystyrene
 - (B) 1" Expanded Polystyrene on MSE and concrete stem walls
 - (C) Contact joint
 - (D) 4'-0" wide pavement reinforcing fabric
 - (E) For barrier slabs on the low side of a cross slope, the bottom must be built level.
 - ∞ Indicates bundled bars



SECTION A-A
 1/2" = 1'-0"

(For all other Earth Retaining Systems)

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY H. HAKIMI	CHECKED G. CARROLL
DETAILS	BY N. HUTTON	CHECKED G. CARROLL
QUANTITIES	BY H. HAKIMI	CHECKED G. CARROLL

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

C. GONG
 PROJECT ENGINEER

BRIDGE NO.	33E0405
POST MILES	23.3

RETAINING WALL No. 245
DETAIL No. 5

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

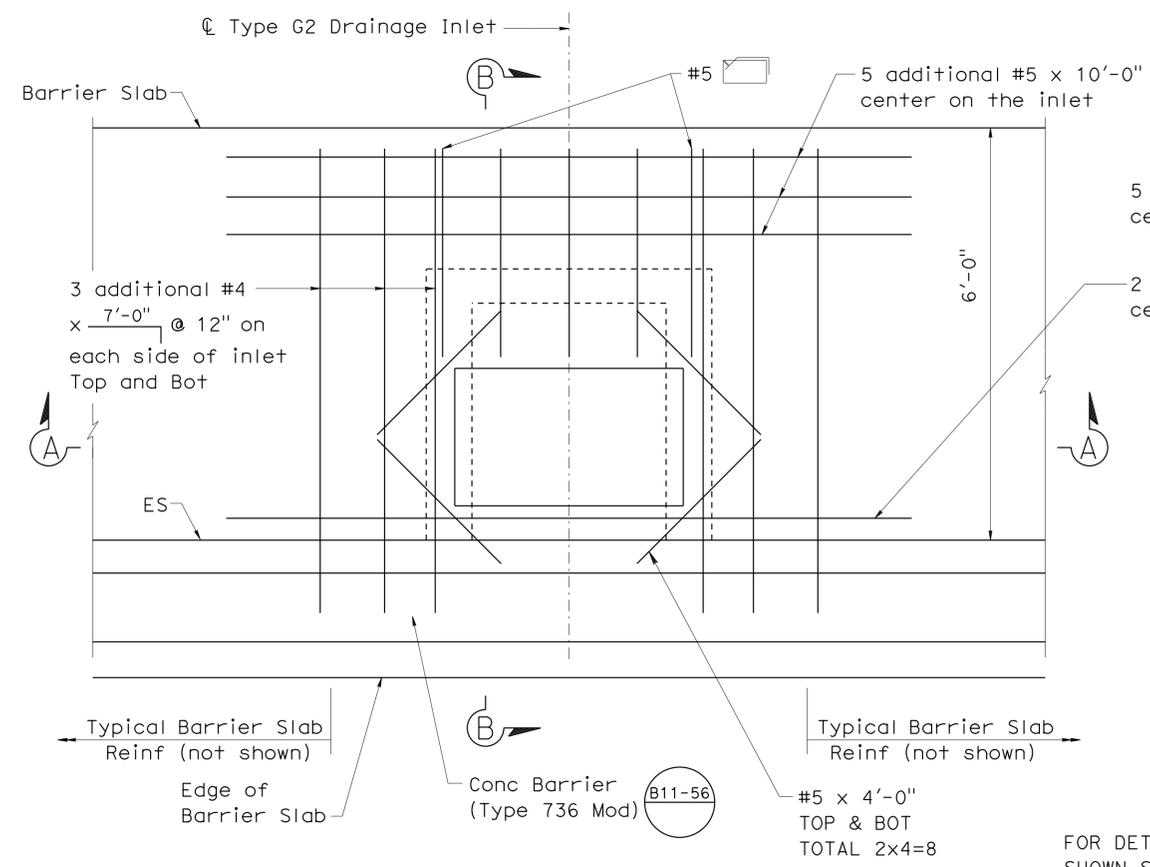
REVISION DATES	SHEET	OF
12-22-14 8-24-14 9-18-14 11-17-14	10	13

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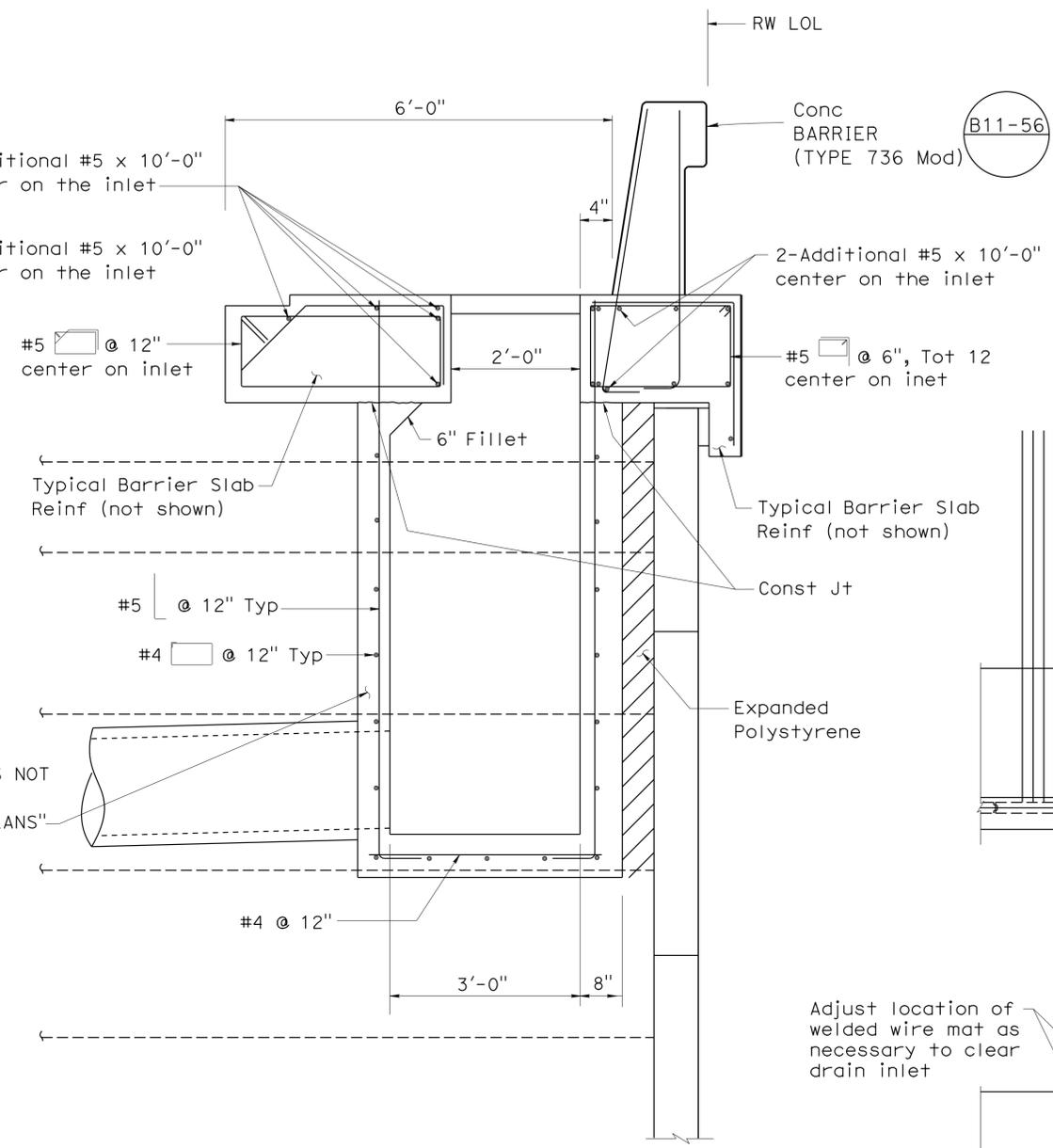
USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	ALA	84	22.9/22.7	792	814

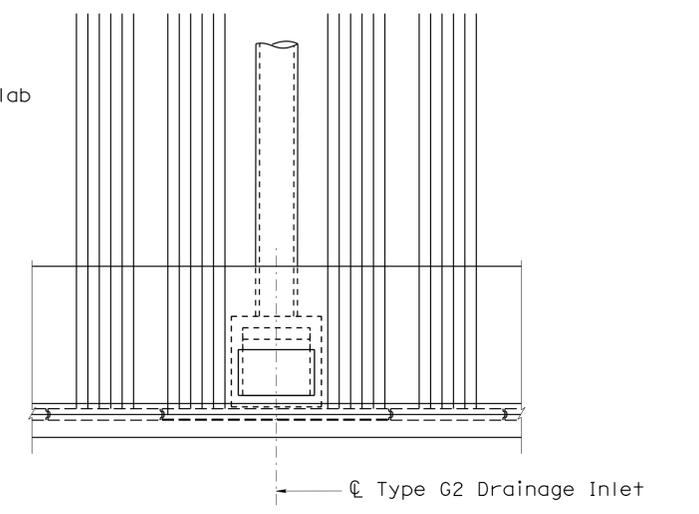
REGISTERED CIVIL ENGINEER
 12-22-14 DATE
 2-23-15 PLANS APPROVAL DATE
 CHAO GONG
 No. No. C53837
 Exp. 9-30-15
 CIVIL
 STATE OF CALIFORNIA
 ALAMEDA COUNTY TRANSPORTATION COMMISSION
 1111 BROADWAY, SUITE 800
 OAKLAND, CA 94607
 URS CORPORATION
 1333 BROADWAY, SUITE 800
 OAKLAND, CA 94612-1924



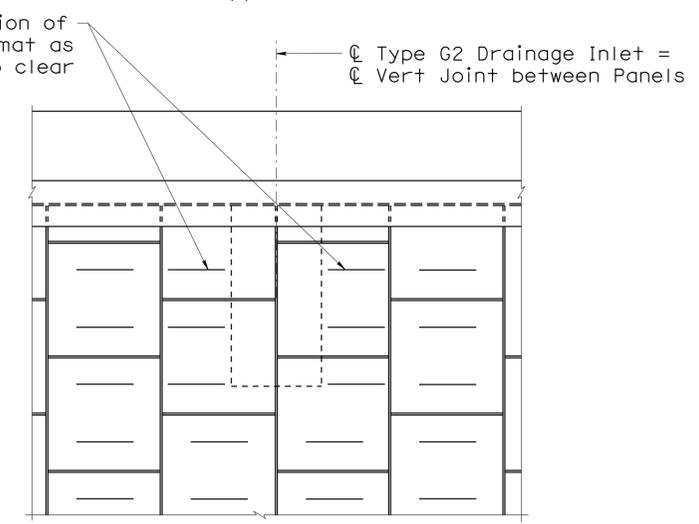
TYPE G2 INLET ENLARGED PLAN
 $\frac{3}{4}'' = 1'-0''$



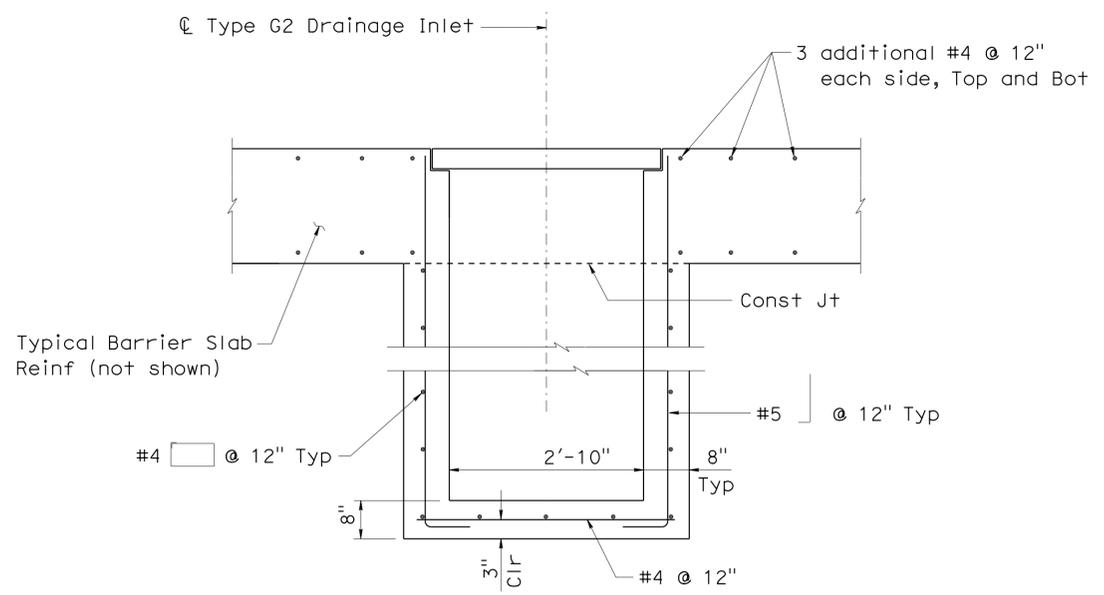
SECTION B-B
 $\frac{3}{4}'' = 1'-0''$



PLAN
 $\frac{1}{4}'' = 1'-0''$



ELEVATION
 $\frac{1}{4}'' = 1'-0''$



SECTION A-A
 $\frac{3}{4}'' = 1'-0''$

DESIGN OVERSIGHT
 David Soon
 2-23-15
 SIGN OFF DATE

DESIGN	BY H. HAKIMI	CHECKED G. CARROLL
DETAILS	BY N. HUTTON	CHECKED G. CARROLL
QUANTITIES	BY H. HAKIMI	CHECKED G. CARROLL

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

C. GONG
 PROJECT ENGINEER

BRIDGE NO.	33E0405
POST MILES	23.3

RETAINING WALL No. 245
DETAIL No. 6

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
12-22-14 2-23-14 3-15-14 11-17-14	11	13

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	793	814

12-22-14
DATE

2-23-15
PLANS APPROVAL DATE

Stephen Huang
No. C 42289
Exp. 3-31-16
REGISTERED PROFESSIONAL ENGINEER
GEOTECHNICAL
STATE OF CALIFORNIA

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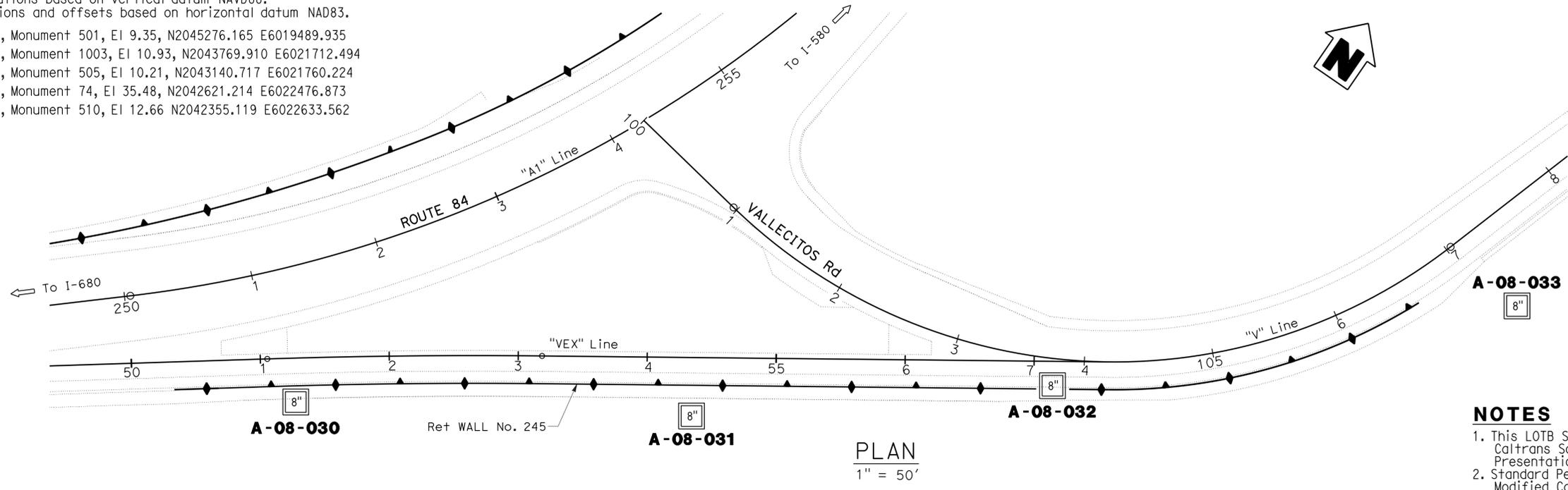
URS CORPORATION
1333 BROADWAY, SUITE 800
OAKLAND, CA 94612

ALAMEDA COUNTY TRANSPORTATION COMMISSION
1111 BROADWAY, SUITE 800
OAKLAND, CA 94607

BENCH MARK

All elevations based on vertical datum NAVD88.
All stations and offsets based on horizontal datum NAD83.

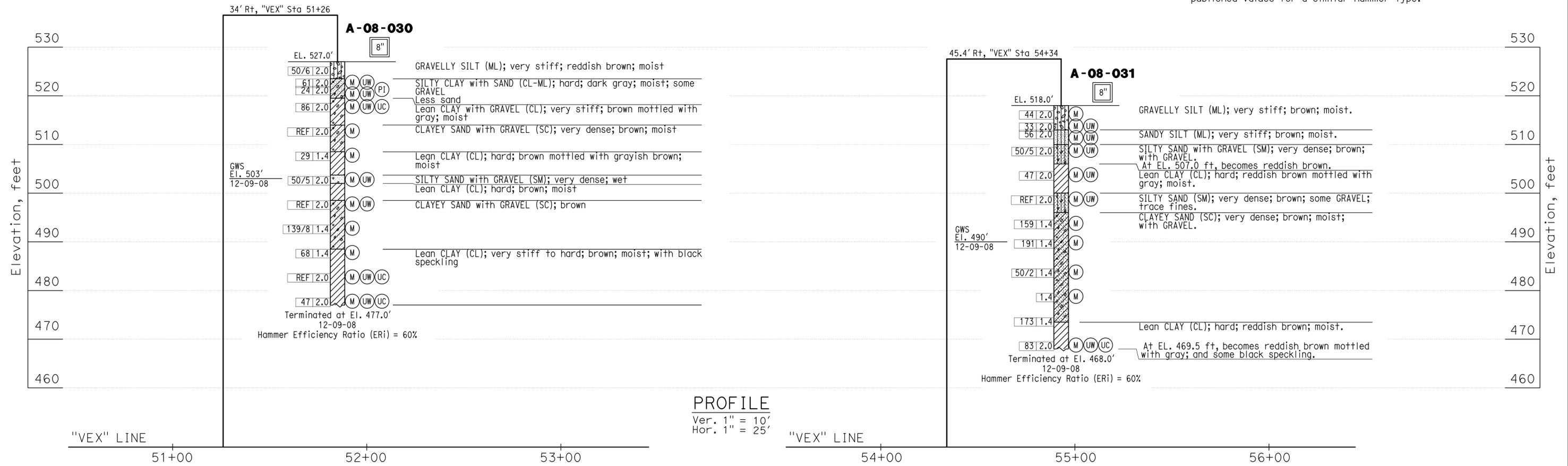
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BM No. 2, Monument 1003, El 10.93, N2043769.910 E6021712.494
BM No. 3, Monument 505, El 10.21, N2043140.717 E6021760.224
BM No. 4, Monument 74, El 35.48, N2042621.214 E6022476.873
BM No. 5, Monument 510, El 12.66 N2042355.119 E6022633.562



PLAN
1" = 50'

NOTES

- This LOTB Sheet was prepared in accordance with the Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).
- Standard Penetration test sampler I.D. = 1.44 inch (1.4) Modified California sampler I.D. = 1.96 inch (2.0) Thin-walled Shelby tube sampler I.D. = 2.97 inch (3.0)
- UC and UU values reported are undrained shear strengths in tsf.
- Hammer efficiency ratio for 8-inch auger boring is based on published values for a similar hammer type.



PROFILE
Ver. 1" = 10'
Hor. 1" = 25'

<p>DESIGN OVERSIGHT David Soon 2-23-15 SIGN OFF DATE</p>	<p>DRAWN BY B. Vuong</p> <p>CHECKED BY M. Larson</p>	<p>C. Rambo</p> <p>FIELD INVESTIGATION BY: DATE: Dec 2008</p>	<p>PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION</p>	<p>Stephen Huang PROJECT ENGINEER</p>	<p>BRIDGE NO. 33E0405</p> <p>POST MILES 23.3</p>	<p>RETAINING WALL No. 245 LOG OF TEST BORINGS 1 OF 2</p>						
<p>GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)</p>			<p>ORIGINAL SCALE IN INCHES FOR REDUCED PLANS</p>	<p>UNIT: 0733 PROJECT NUMBER & PHASE: 04000205811 CONTRACT NO.: 04-297624</p>	<p>DISREGARD PRINTS BEARING EARLIER REVISION DATES</p> <table border="1" style="font-size: small;"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>12-22-14 8-23-14 9-18-14 11-17-14</td> <td>12</td> <td>13</td> </tr> </table>		REVISION DATES	SHEET	OF	12-22-14 8-23-14 9-18-14 11-17-14	12	13
REVISION DATES	SHEET	OF										
12-22-14 8-23-14 9-18-14 11-17-14	12	13										

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	794	814

12-22-14
DATE

2-23-15
PLANS APPROVAL DATE

Stephen Huang
No. C 42289
Exp. 3-31-16
REGISTERED PROFESSIONAL ENGINEER
GEOTECHNICAL
STATE OF CALIFORNIA

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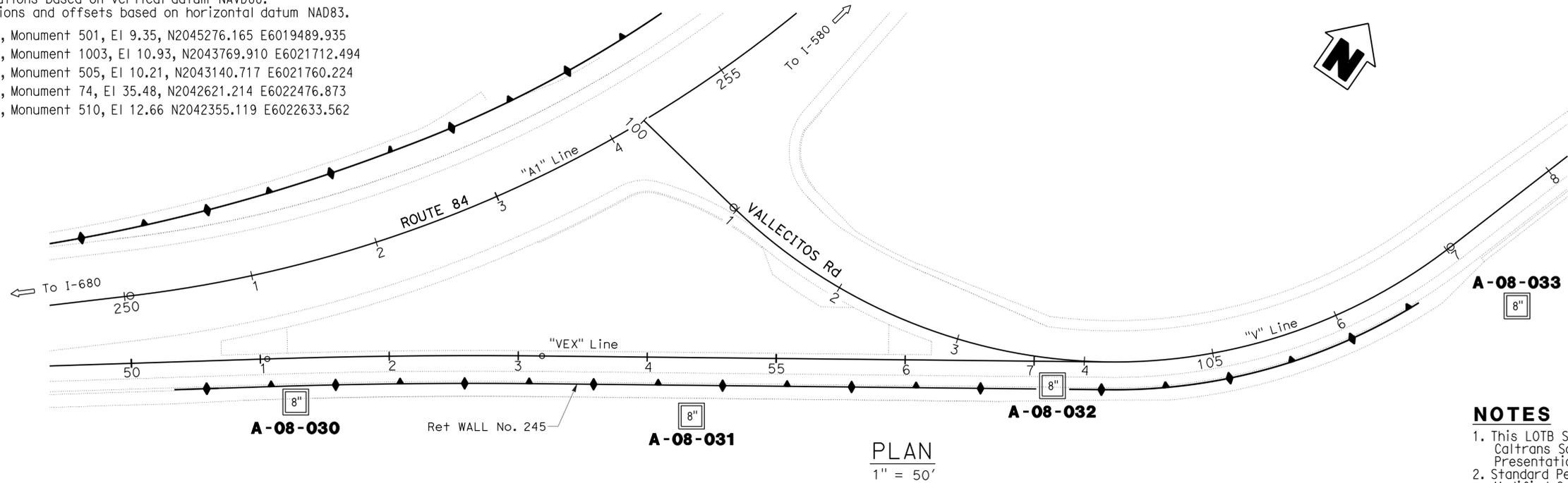
URS CORPORATION
1333 BROADWAY, SUITE 800
OAKLAND, CA 94612

ALAMEDA COUNTY TRANSPORTATION COMMISSION
1111 BROADWAY, SUITE 800
OAKLAND, CA 94607

BENCH MARK

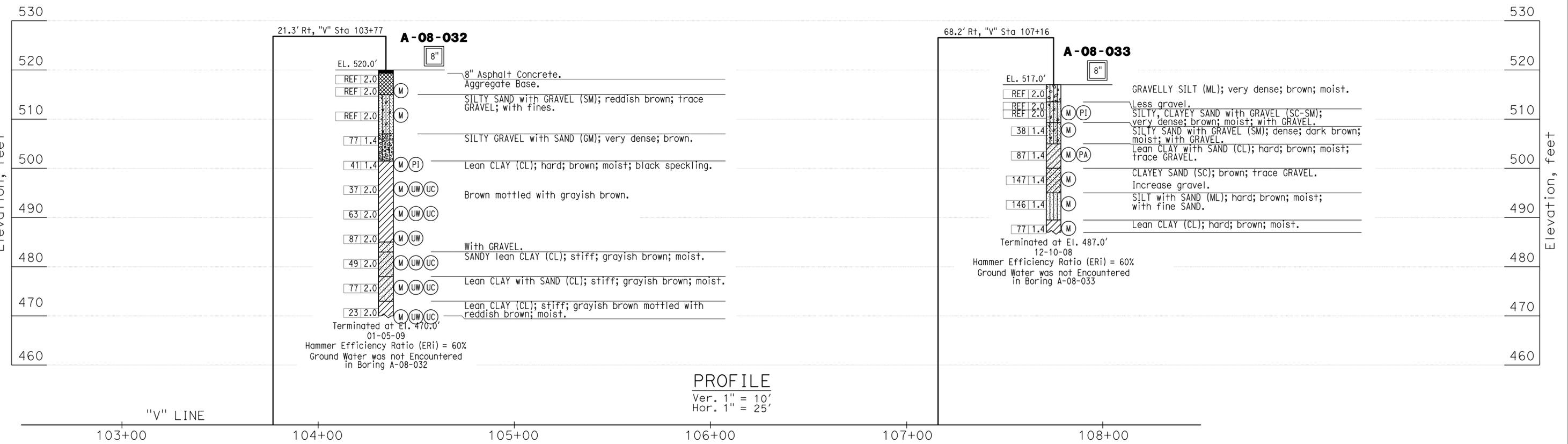
All elevations based on vertical datum NAVD88.
All stations and offsets based on horizontal datum NAD83.

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BM No. 2, Monument 1003, El 10.93, N2043769.910 E6021712.494
BM No. 3, Monument 505, El 10.21, N2043140.717 E6021760.224
BM No. 4, Monument 74, El 35.48, N2042621.214 E6022476.873
BM No. 5, Monument 510, El 12.66 N2042355.119 E6022633.562



NOTES

- This LOTB Sheet was prepared in accordance with the Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).
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- UC and UU values reported are undrained shear strengths in tsf.
- Hammer efficiency ratio for 8-inch auger boring is based on published values for a similar hammer type.



PROFILE

Ver. 1" = 10'
Hor. 1" = 25'

 DESIGN OVERSIGHT 2-23-15 SIGN OFF DATE	DRAWN BY B. Vuong	C. Rambo	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Stephen Huang PROJECT ENGINEER	BRIDGE NO. 33E0405	RETAINING WALL No. 245 LOG OF TEST BORINGS 2 OF 2
	CHECKED BY M. Larson	FIELD INVESTIGATION BY: DATE: Dec 2008 - Jan 2009		PROJECT NUMBER & PHASE: 04000205811	CONTRACT NO.: 04-297624	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	795	814

RETAINING WALL NO. 246 BRIDGE NO. 33E0075

QUANTITIES

STRUCTURE EXCAVATION (SOIL NAIL WALL)	3,086	CY
STRUCTURE BACKFILL (SOIL NAIL WALL)	123	CY
SOIL NAIL	42,400	LF
STRUCTURAL CONCRETE, RETAINING WALL	1,202	CY
GRAPE VINE TEXTURE	18,520	SQFT
ROUNDED RIVER ROCK TEXTURE	5,531	SQFT
BAR REINFORCING STEEL (RETAINING WALL)	195,637	LB
STRUCTURAL SHOTCRETE	411	CY
MINOR CONCRETE (GUTTER) (LF)	1,180	LF
CHAIN LINK FENCE (TYPE CL-4, VINYL-CLAD)	1,180	LF

W. Sennett 01/16/15
 REGISTERED CIVIL ENGINEER DATE

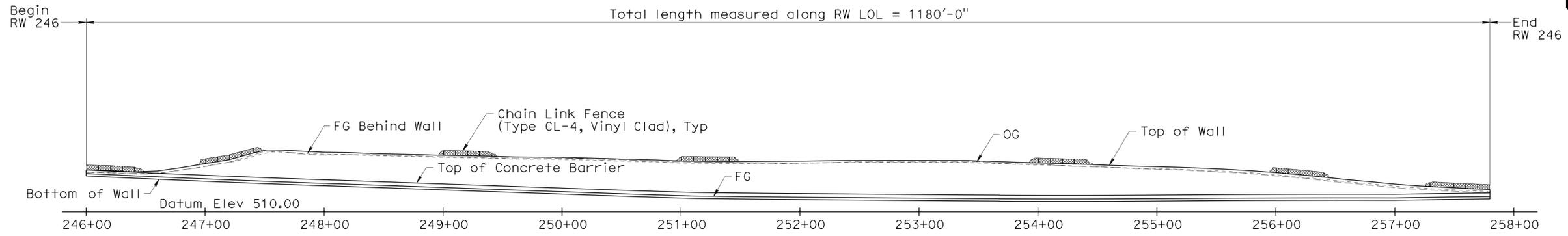
2-23-15
 PLANS APPROVAL DATE

WESLEY SENNETT
 No. C 82031
 Exp. 03/31/16
 CIVIL
 STATE OF CALIFORNIA

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ALAMEDA COUNTY TRANSPORTATION COMMISSION
 1111 BROADWAY, SUITE 800
 OAKLAND, CA 94607

MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831



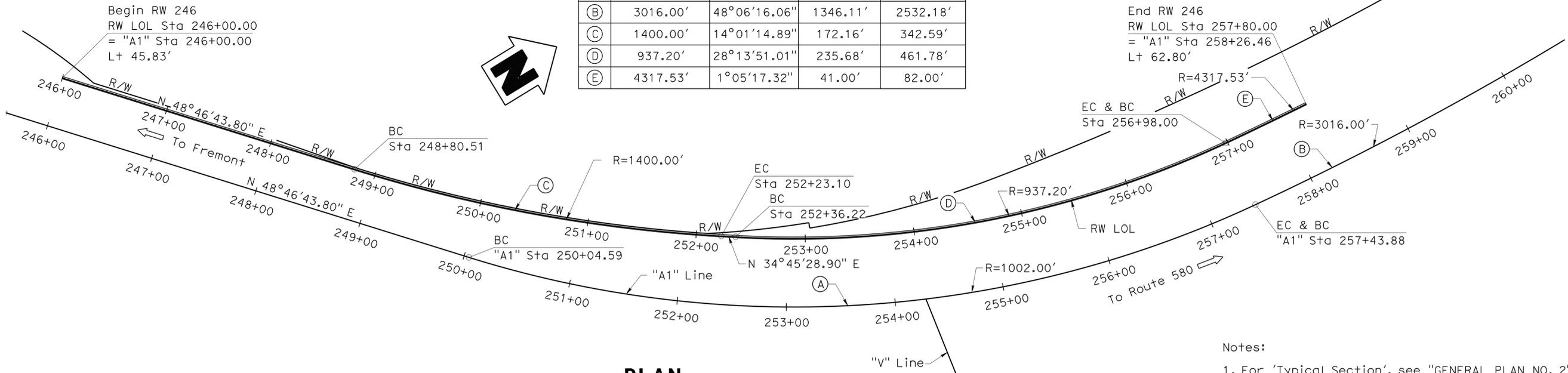
DEVELOPED ELEVATION (Architectural Treatment not shown, see Note 3)
 1" = 50'-0"

INDEX TO PLANS

SHEET NO.	TITLE
1	GENERAL PLAN NO. 1
2	GENERAL PLAN NO. 2
3	FOUNDATION PLAN
4	SOIL NAIL WALL DETAILS NO. 1
5	SOIL NAIL WALL DETAILS NO. 2
6	SOIL NAIL WALL DETAILS NO. 3
7	SOIL NAIL WALL DETAILS NO. 4
8	SOIL NAIL WALL DETAILS NO. 5
9	SOIL NAIL WALL DETAILS NO. 6
10	SOIL NAIL WALL DETAILS NO. 7
11	SOIL NAIL WALL DETAILS NO. 8
12	SOIL NAIL WALL DETAILS NO. 9
13	SOIL NAIL WALL DETAILS NO. 10
14	SOIL NAIL WALL DETAILS NO. 11
15	SOIL NAIL WALL DETAILS NO. 12
16	SOIL NAIL WALL DETAILS NO. 13
17	SOIL NAIL WALL DETAILS NO. 14
18	WALL DRAIN DETAILS
19	LOG OF TEST BORINGS (1 OF 2)
20	LOG OF TEST BORINGS (2 OF 2)

CURVE DATA TABLE

NO	R	Δ	T	L
(A)	1002.00'	42°16'25.03"	387.38'	739.29'
(B)	3016.00'	48°06'16.06"	1346.11'	2532.18'
(C)	1400.00'	14°01'14.89"	172.16'	342.59'
(D)	937.20'	28°13'51.01"	235.68'	461.78'
(E)	4317.53'	1°05'17.32"	41.00'	82.00'



PLAN
 1" = 50'-0"

- Notes:
- For 'Typical Section', see "GENERAL PLAN NO. 2" sheet.
 - For 'General Notes', see "GENERAL PLAN NO. 2" sheet.
 - For Architectural Treatment, see "SOIL NAIL WALL DETAILS NO.14" sheet.

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY W. Sennett	CHECKED R. Huang	LOAD & RESISTANCE FACTOR DESIGN	Live Load Surcharge = 250 psf
DETAILS	BY X. Sun	CHECKED R. Huang	LAYOUT	BY W. Sennett
QUANTITIES	BY W. Sennett	CHECKED R. Huang	SPECIFICATIONS	BY K. Chen
				CHECKED R. Huang
				PLANS AND SPECS COMPARED R. Sennett

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

R. Sennett
 PROJECT ENGINEER

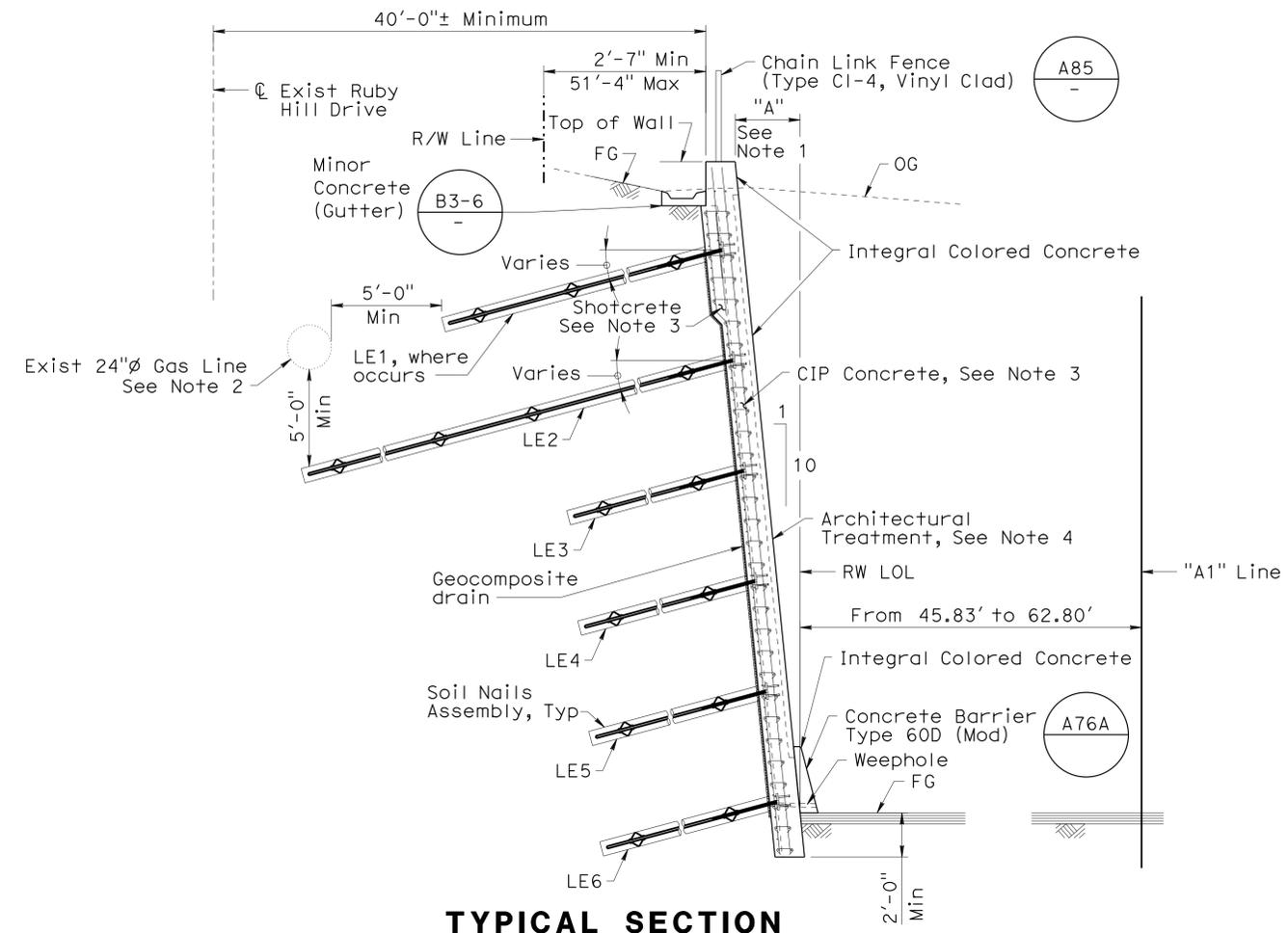
BRIDGE NO.	33E0075
POST MILES	22.9

RETAINING WALL 246
GENERAL PLAN No. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	796	814


 01/16/15
 REGISTERED CIVIL ENGINEER DATE
 2-23-15
 PLANS APPROVAL DATE
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 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831

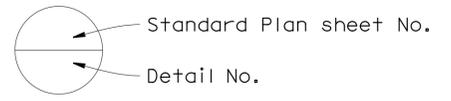


GENERAL NOTES

- DESIGN: Service Load Design Method per FHWA Manual for Design & Construction-Monitoring of Soil Nail Walls (FHWA-SA-96-069R and FHWA O-IF-03-017)
 LIVE LOAD: Surcharge = 250 psf
 REINFORCED CONCRETE: $f_y = 60,000$ psi, $f'_c = 3,600$ psi
 SHOTCRETE: $f_y = 60,000$ psi, $f'_c = 3,600$ psi
 SOIL NAILS ASSEMBLY: ASTM Designation: A615, $f_y = 60,000$ psi, Nail grout $f'_c = 3,000$ psi
 STRUCTURAL STEEL: ASTM Designation: A709, $f_y = 36,000$ psi
 HEADED STUD: ASTM Designation: A307, $f_y = 36,000$ psi
 DESIGN PARAMETERS (Soil): $\phi = 36^\circ$, $C = 0$ psf, $\gamma = 130$ pcf, $Q_d = 1.57$ k/ft
 PSEUDE-STATIC SEISMIC ACCELERATION: Coefficient = 0.23 g

STANDARD PLANS

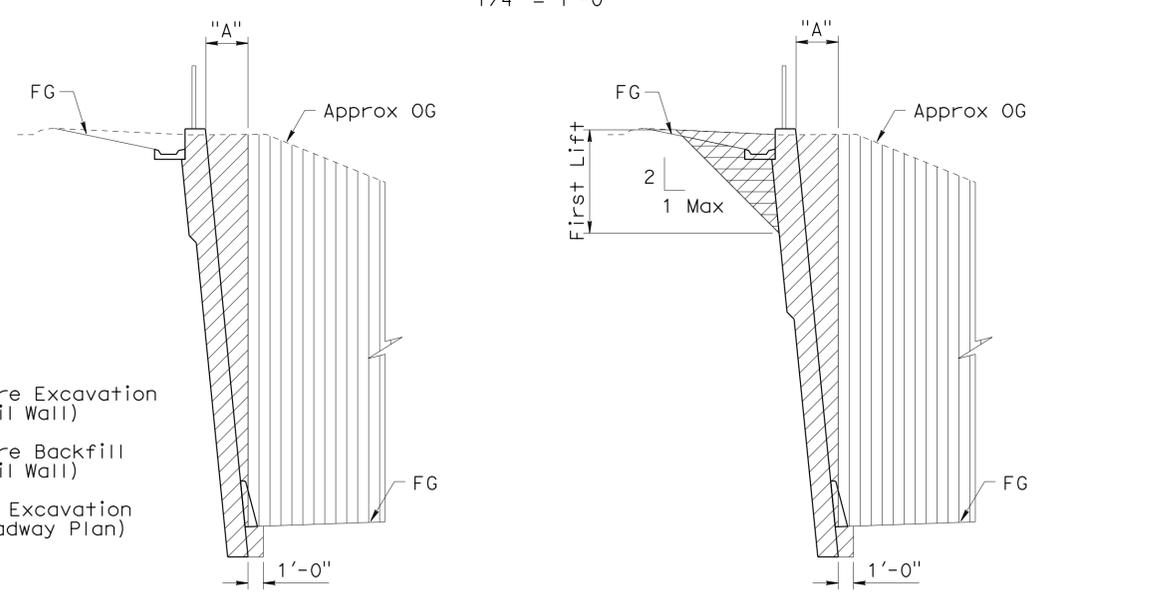
- Dated 2010
- A10A Abbreviations (Sheet 1 of 2)
 - A10B Abbreviations (Sheet 2 of 2)
 - A10C Lines and Symbols (Sheet 1 of 3)
 - A10D Lines and Symbols (Sheet 2 of 3)
 - A10E Lines and Symbols (Sheet 3 of 3)
 - A10F Legend - Soil (Sheet 1 of 2)
 - A10G Legend - Soil (Sheet 2 of 2)
 - A62B Limits of Payment for Excavation and Backfill-Bridge Surcharge and Wall
 - A76A Concrete Barrier Type 60D (Mod)
 - A85 Chain Link Fence
 - B3-6 Retaining Wall Details No. 2



ABBREVIATION LIST

LE# - Soil Nail Layer No.

- Notes:
- For offset dimension "A", see 'Soil Nail Wall Profile' table on "SOIL NAIL WALL DETAILS NO. 1" thru "SOIL NAIL WALL DETAILS NO. 10" sheets.
 - Provide 5'-0" min clearance.
 - See "Typical Section 1" & "Typical Section 2" on "SOIL NAIL WALL DETAILS NO. 11" sheet for CIP concrete & shotcrete limits.
 - Refer to "Road Plans" for Architectural Treatment Details and Formliner Pattern.



SOIL NAIL WALL EXCAVATION AND BACKFILL PAY LIMITS

NO SCALE

LEGEND

	Structure Excavation (Soil Nail Wall)
	Structure Backfill (Soil Nail Wall)
	Roadway Excavation (see Roadway Plan)

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY W. Sennett	CHECKED R. Huang
DETAILS	BY X. Sun	CHECKED R. Huang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 R. Sennett
 PROJECT ENGINEER

BRIDGE NO.	33E0075
POST MILES	22.9

RETAINING WALL 246 GENERAL PLAN No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 0733 PROJECT NUMBER & PHASE: 04000205811

CONTRACT NO.: 04-297624

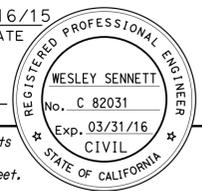
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
02/05/09 10/27/10 05/30/14 01/16/15	2	20

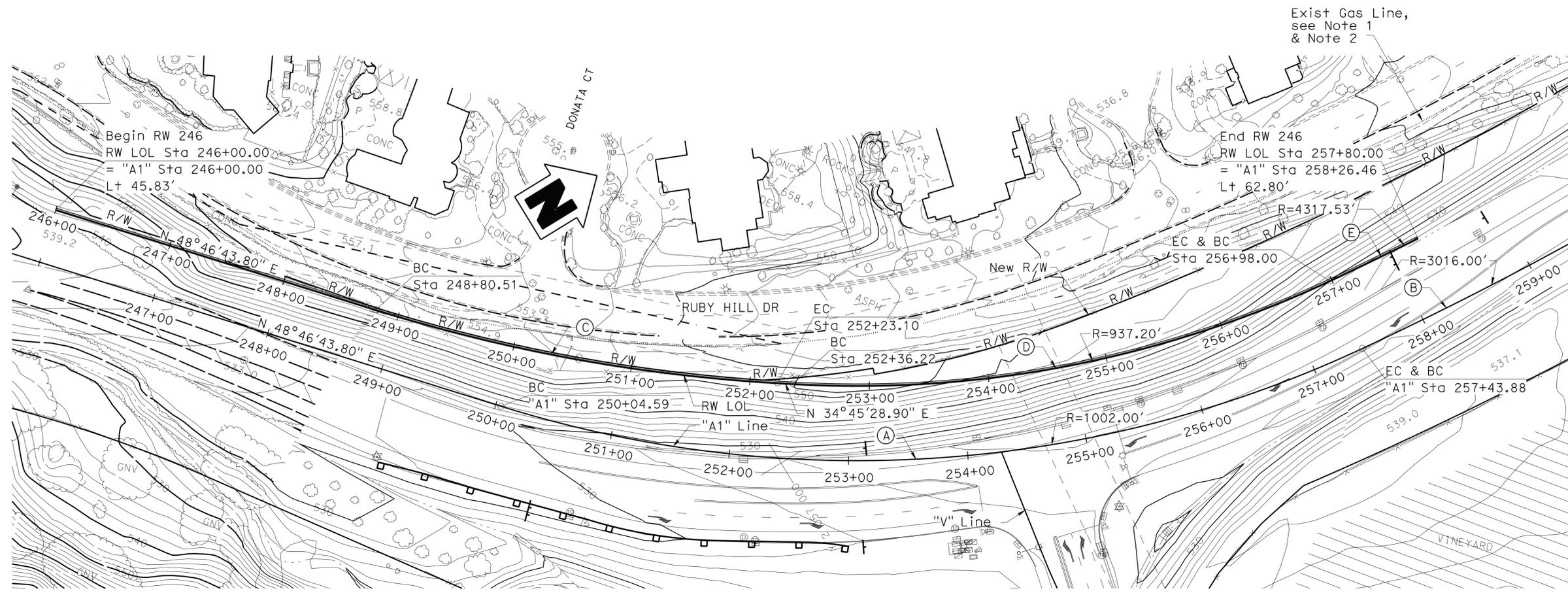
USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	797	814

W. Sennett
 REGISTERED CIVIL ENGINEER DATE 01/16/15
 2-23-15
 PLANS APPROVAL DATE
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ALAMEDA COUNTY TRANSPORTATION COMMISSION
 1111 BROADWAY, SUITE 800
 OAKLAND, CA 94607
 MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831



FOUNDATION PLAN
 1" = 50'-0"

CURVE DATA TABLE

NO	R	Δ	T	L
(A)	1002.00'	42°16'25.03"	387.38'	739.29'
(B)	3016.00'	48°06'16.06"	1346.11'	2532.18'
(C)	1400.00'	14°01'14.89"	172.16'	342.59'
(D)	937.20'	28°13'51.01"	235.68'	461.78'
(E)	4317.53'	1°05'17.32"	41.00'	82.00'

Note:

- For elevation of existing Gas Line, see 'Road Plans'.
- Contractor must verify location of exist Gas Line before installing soil nail assembly.

Stephen Huang
 GEOTECHNICAL PROFESSIONAL APPROVAL DATE 01/16/15

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

SCALE: 1"=50'	VERT. DATUM NAVD88	HORZ. DATUM NAD83
PHOTOGRAMMETRY AS OF: 11/10/2005	ALIGNMENT TIES Dist. Traverse Sheet	
SURVEYED BY Dan Scott	DRAFTED BY Abhijeet Bhoi	
FIELD CHECKED BY Dan Scott	CHECKED BY	

DESIGN BY W. Sennett	CHECKED R. Huang
DETAILS BY X. Sun	CHECKED R. Huang
QUANTITIES BY W. Sennett	CHECKED R. Huang

**PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION**

R. Sennett
 PROJECT ENGINEER

BRIDGE NO.	33E0075
POST MILES	22.9

**RETAINING WALL 246
 FOUNDATION PLAN**

FOUNDATION PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
02/05/09 10/27/10 05/20/14 01/16/15	3	20

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	798	814



 W. Sennett 01/16/15
 REGISTERED CIVIL ENGINEER DATE
 2-23-15
 PLANS APPROVAL DATE
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 SACRAMENTO, CALIFORNIA 95831

SOIL NAIL WALL PROFILE

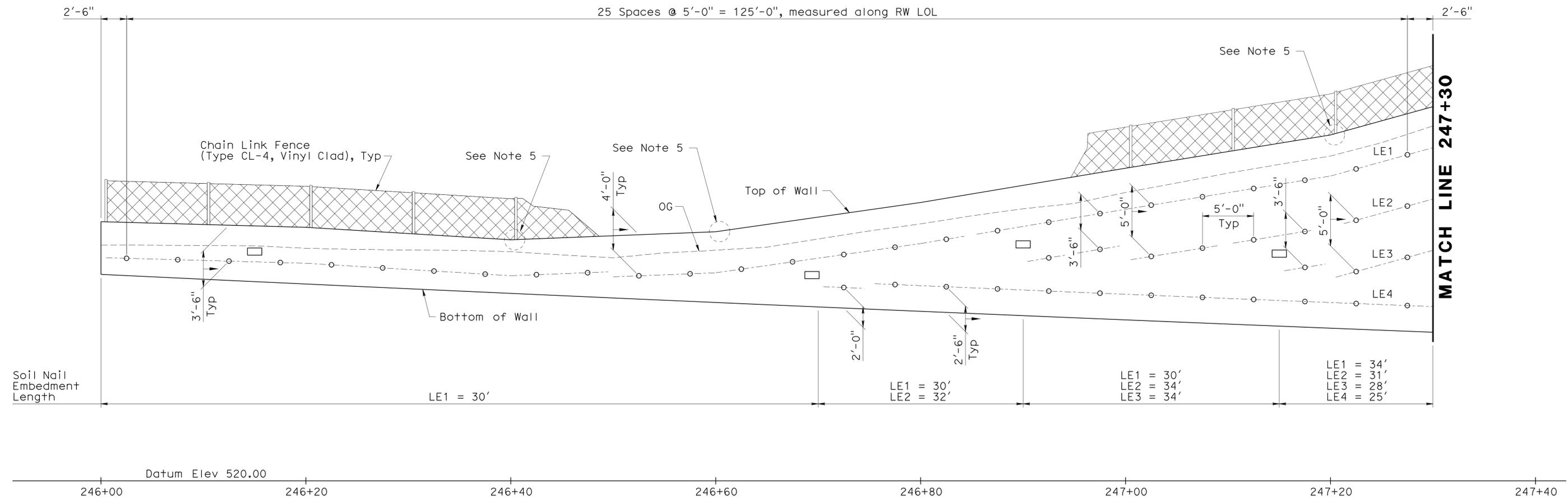
Station	Top of Wall Elevation	Bottom of Wall Elevation	FG Elevation	Dimension "A" (ft)
246+00	545.25	540.12	542.12	0.31
246+20	544.70	539.12	541.18	0.35
246+40	543.49	538.26	540.26	0.32
246+60	544.27	537.38	539.38	0.49
246+80	547.12	536.52	538.52	0.86
247+00	550.46	535.68	537.68	1.28
247+20	553.70	534.87	536.87	1.68

LEGEND

- Indicates soil nail location with typical angle of inclination of 15 degrees
- Indicates proof test soil nail location; Location may be adjusted by the Engineer
- LE# Indicates soil nail profile line

Notes:

1. Vertical spacing between soil nail assemblies is 5'-6" Max.
2. Horizontal spacing between soil nail assemblies is 5'-0" Max.
3. Place soil nail assembly normal to RW LOL and at 15 degrees inclination, except noted otherwise on the plans.
4. Roadway FG and Concrete Barrier Type 60D not shown for clarity.
5. Round angle point or sag point.



SOIL NAIL WALL DEVELOPED ELEVATION
1" = 5'-0"

David Soon
 DESIGN OVERSIGHT
 2-23-15
 SIGN OFF DATE

DESIGN	BY W. Sennett	CHECKED R. Huang
DETAILS	BY X. Sun	CHECKED R. Huang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

R. Sennett PROJECT ENGINEER	BRIDGE NO. 33E0075
	POST MILES 22.9

RETAINING WALL 246
 SOIL NAIL WALL DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0733
PROJECT NUMBER & PHASE: 04000205811

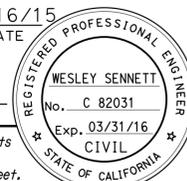
CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
02/05/09 10/27/10 05/20/14 01/16/15	4	20

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	799	814


 01/16/15
 REGISTERED CIVIL ENGINEER DATE
 2-23-15
 PLANS APPROVAL DATE
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 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831

SOIL NAIL WALL PROFILE

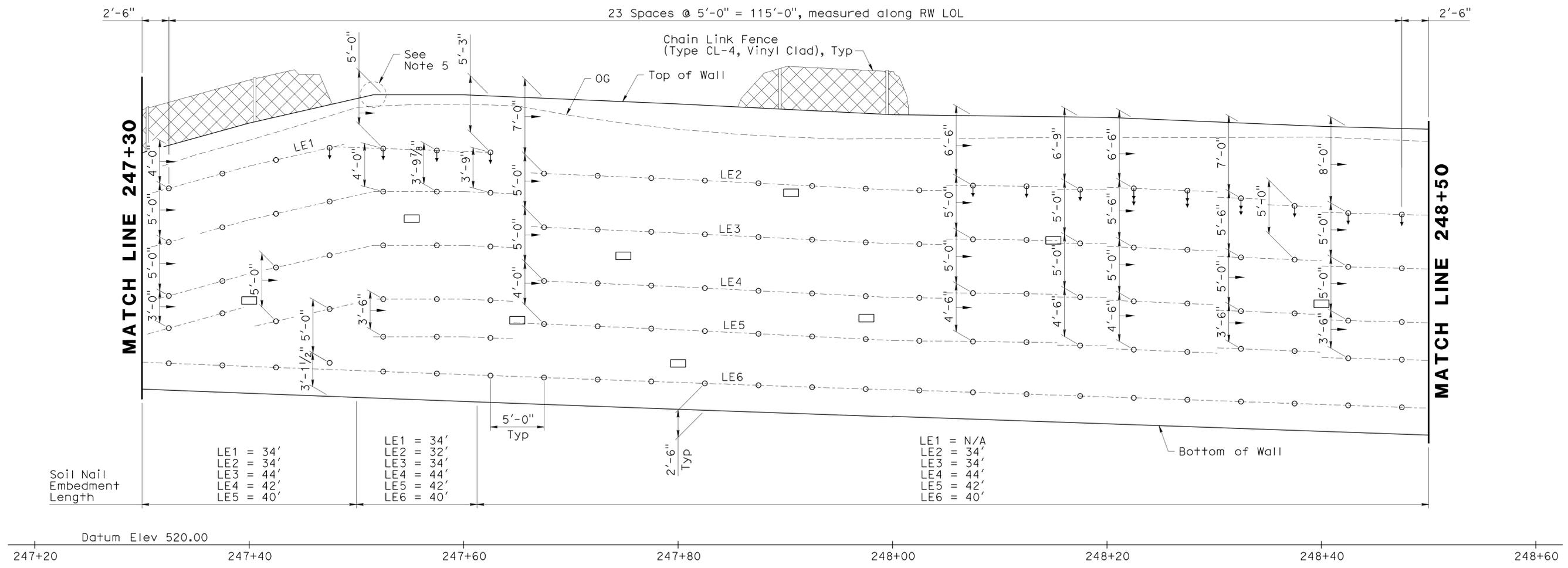
Station	Top of Wall Elevation	Bottom of Wall Elevation	FG Elevation	Dimension "A" (ft)
247+40	559.21	534.09	536.09	2.31
247+51.57	561.85	533.65	535.65	2.62
247+60	561.85	533.33	535.33	2.65
247+80	561.00	532.60	534.60	2.64
248+00	560.00	531.94	533.94	2.61
248+20	559.75	531.25	533.25	2.65
248+40	558.92	530.55	532.55	2.64

LEGEND

- Indicates soil nail location with typical angle of inclination of 15 degrees
- ◊ Indicates soil nail location with angle of inclination of 18 degrees
- ◐ Indicates soil nail location with angle of inclination of 20 degrees
- Indicates proof test soil nail location; Location may be adjusted by the Engineer
- LE# Indicates soil nail profile line

Notes:

1. Vertical spacing between soil nail assemblies is 5'-6" Max.
2. Horizontal spacing between soil nail assemblies is 5'-0" Max.
3. Place soil nail assembly normal to RW LOL and at 15 degrees inclination, except noted otherwise on the plans.
4. Roadway FG and Concrete Barrier Type 60D not shown for clarity.
5. Round angle point or sag point.



SOIL NAIL WALL DEVELOPED ELEVATION
1" = 5'-0"

DESIGN OVERSIGHT
 David Soon
 2-23-15
 SIGN OFF DATE

DESIGN	BY W. Sennett	CHECKED R. Huang
DETAILS	BY X. Sun	CHECKED R. Huang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 PROJECT ENGINEER
 R. Sennett

BRIDGE NO.	33E0075
POST MILES	22.9

RETAINING WALL 246
 SOIL NAIL WALL DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



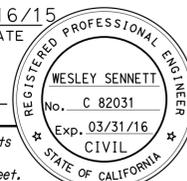
UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811
 CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
02/05/09 10/27/10 05/30/14 01/16/15	5	20

USERNAME => s141070 DATE PLOTTED => 25-MAR-2015 TIME PLOTTED => 08:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	22.9/22.7	800	814


 01/16/15
 REGISTERED CIVIL ENGINEER DATE
 2-23-15
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

ALAMEDA COUNTY TRANSPORTATION COMMISSION
 1111 BROADWAY, SUITE 800
 OAKLAND, CA 94607
 MGE ENGINEERING, INC.
 7415 GREENHAVEN DRIVE, SUITE 100
 SACRAMENTO, CALIFORNIA 95831

SOIL NAIL WALL PROFILE

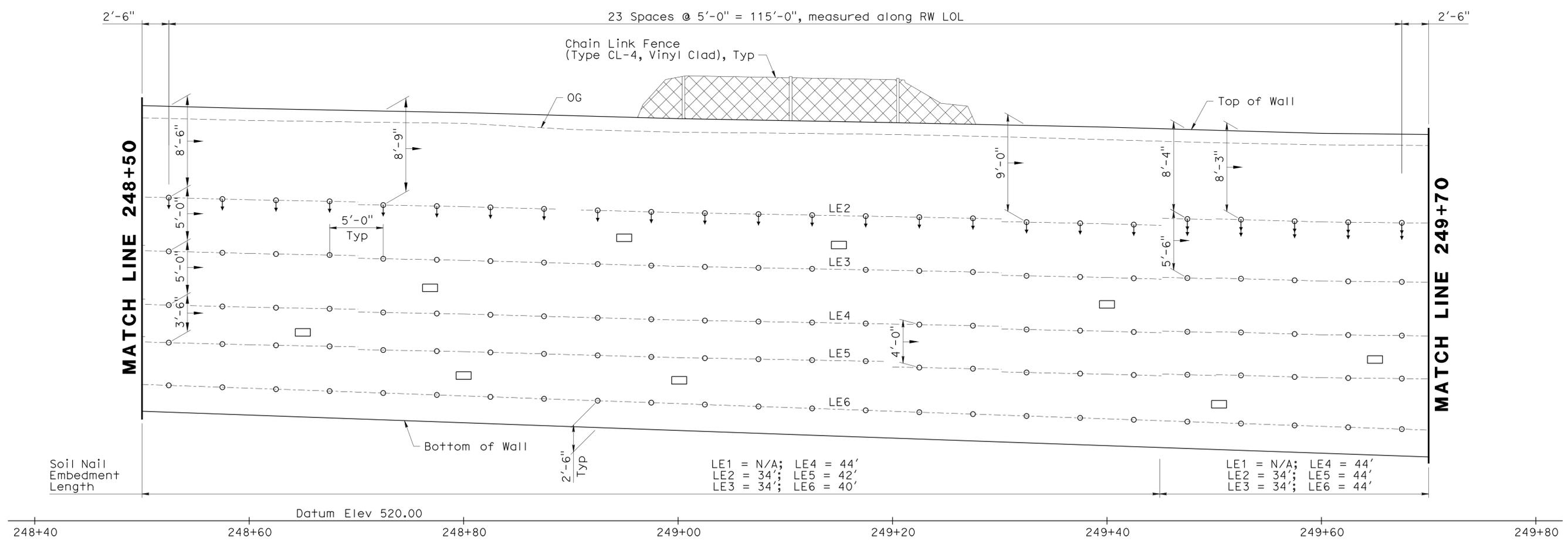
Station	Top of Wall Elevation	Bottom of Wall Elevation	FG Elevation	Dimension "A" (ft)
248+60	558.39	529.84	531.84	2.65
248+80	558.00	529.13	531.13	2.69
249+00	557.44	528.41	530.41	2.70
249+20	557.07	527.70	529.70	2.74
249+40	556.65	526.99	528.99	2.77
249+60	556.07	526.25	528.29	2.78

LEGEND

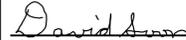
- Indicates soil nail location with typical angle of inclination of 15 degrees
- ◊ Indicates soil nail location with angle of inclination of 18 degrees
- ◐ Indicates soil nail location with angle of inclination of 20 degrees
- Indicates proof test soil nail location; Location may be adjusted by the Engineer
- LE# Indicates soil nail profile line

Notes:

1. Vertical spacing between soil nail assemblies is 5'-6" Max.
2. Horizontal spacing between soil nail assemblies is 5'-0" Max.
3. Place soil nail assembly normal to RW LOL and at 15 degrees inclination, except noted otherwise on the plans.
4. Roadway FG and Concrete Barrier Type 60D not shown for clarity.



SOIL NAIL WALL DEVELOPED ELEVATION
 1" = 5'-0"


 DESIGN OVERSIGHT
 David Soon
 2-23-15
 SIGN OFF DATE

DESIGN	BY W. Sennett	CHECKED R. Huang
DETAILS	BY X. Sun	CHECKED R. Huang
QUANTITIES	BY W. Sennett	CHECKED R. Huang

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

R. Sennett PROJECT ENGINEER	BRIDGE NO. 33E0075
	POST MILES 22.9

RETAINING WALL 246
SOIL NAIL WALL DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0733
 PROJECT NUMBER & PHASE: 04000205811

CONTRACT NO.: 04-297624

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
02/05/09 10/27/10 05/30/14 01/16/15	6	20

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